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CAVALRY IN MODERN WAR.

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"Cavalry is all that it ever has been and more; it moves abreast of tactical reform; more than ever it is a strategical factor; if now it seldom thunders down in ponderous masses upon the *front* of an infantry line of battle, it may yet dash with equal effect upon the hostile flanks. If more poetry in the past, there is full measure of glory and usefulness in the future."—*General T. F. Rodenbough*.

**I**N these days when our country carries more weight among the nations than ever before; when no important move is made in the world's politics without ascertaining in advance the attitude of America; with interests in every clime, and responsibilities as widely scattered as our regimental standards, we must recognize that increased importance creates jealousies, extended frontiers bring probabilities of friction, and be ready if necessary, to fight for peace.

As early as the time of Frederick some held that with the invention of firearms cavalry had lost its importance in battle. At the outbreak of our Civil War the same idea was prevalent, but both sides steadily increased their horsemen, until in 1865 the Northern guidons fluttered over eighty thousand cavalry. The cavalry emerged from that conflict with credit, and with its work in Indian wars, its part in the

Santiago campaign and the Philippine insurrection, still holds its place in public esteem. But cavalry is expensive, and few would advocate the false economy which provides something cheap and regrets it in the end. The best brains in Continental armies have studied the problem of having an effective cavalry ready to take the field in war without the burden of maintaining it during peace, and their failure indicates the impossibility of solution. With some still contending that the cavalry day in battle has passed, and facing certain expense if we maintain it, we should glance at what cavalry has done in modern war, and inquire what it can still do, and whether we have need of cavalry.

#### WHAT HAS IT DONE?

Napoleon's use of cavalry was tactical and strategical, but in the peace which followed Waterloo, men lost sight of cavalry efficiency until our Civil War commanded attention. In that great struggle cavalry importance increased, new characteristics were added, and old ones retained. Cavalry became self-protecting, fighting mounted and dismounted against infantry, cavalry and artillery, and almost reached independence on offensive or defensive, at rest or in motion. In the Gettysburg campaign it screened, raided, held positions until the arrival of infantry, reinforced infantry battle lines, and fought straight cavalry battles with revolver and saber. Perhaps so much cavalry efficiency was never crowded into so short a time as by Sheridan's horsemen from March 29 to April 9, 1865, a brief twelve days, which included Dinwiddie, Five Forks, Sailor's Creek; and it finally barred Lee's retreat at Appomattox that April morning until the arrival of the infantry ended the war. So too, Wilson's ride with twelve thousand horsemen through Alabama and Georgia exemplifies a complete school of modern cavalry warfare—charging mounted against infantry and cavalry, fighting infantry on foot, assaulting earth works, doing his own field engineering, and capturing cities and immense supplies.

From later conflicts the cavalry student has not much that is new to learn. Cavalry combats in the Six Weeks'

War did little to influence general results, though after Königgratz the cavalry was found in advance of the main army. The results did determine the Prussians to increase their cavalry notwithstanding the breech-loader, and shaped their ideas for the Franco-German War. In that war after Worth and Spicheran their cavalry was found well in advance, gained full intelligence of the French, and provided for the security of the German armies. Nor was it wanting on the battlefield. At Mars-la-Tour 800 men charged a French corps d'armée, pierced the line of battle and charged on until met by superior cavalry, when it rode back through, having brought 40,000 soldiers to a standstill and gained invaluable time. This charge cost three-fourths of the little command, lost not to rifle or cannon, but to fresh cavalry who charged with saber and lance, and found Von Bredow without reserves. In the Turko-Russian War, Gourko's raid showed the Russian adoption of American methods, and in 1882 the British cavalry held Cairo until the arrival of the infantry, which resulted in the surrender of 10,000 men, and ended the war.

Within fifty years cavalry has faced the saber, revolver, lance and carbine of other cavalry; has suffered fire from old smoothbore and modern cannon; has charged the muzzle-loader, breech-loader and magazine rifle of infantry; has developed the function of screening, and perfected the duty of security and information; has proved its ability to take care of itself against infantry in country unfit for mounted action; and has raided through hostile country—always emphasizing the importance of the dragoon, the type of cavalry toward which all nations are turning, and for the model of which military students still search the history of our Civil War.

#### WHAT CAN CAVALRY STILL DO?

Under present conditions its chief use is strategic. It finds opportunity far to the front at the opening of war to hinder the enemy's mobilization, gain touch with him, occupy important points on the line of advance, seize magazines, make requisitions, destroy roads, railroads, telegraphs, canals, junctions and bridges, and to gain the advantage of moral

effect. Far in advance it meets the opposing cavalry attempting the same for the enemy's army. Cavalry battles result, and to one side or the other accrues the prestige, never to be underestimated, of the first victory. That side by driving its opponent upon his infantry secures a strategical advantage. Generally cavalry must whip cavalry before it can attack the other arms. If encountered in wooded or broken country it fights on foot. Where delay is desired it engages dismounted at bridges, defiles, embankments, cuts and fords. It holds its own or more with the enemy's dismounted cavalry, and brushes aside small bodies of infantry. Its judicious employment in reconnaissance should have a paramount influence on the campaign. When the main armies meet and the cavalry has played its part in battle, the victor will use his cavalry in pursuit, and it will again be opposed by cavalry and have to defeat it before it pursues the infantry and artillery. Undertaking this duty, it establishes and maintains contact with the enemy, scouts the country, searches telegraph and post offices and railway stations, and exhausts all sources of information. The opposing cavalry observes the victor, ascertains whether all his force is pursuing, makes stands to delay that pursuit, destroys bridges, fords, railroads, canal locks, tunnels, rolling stock of railways, besides scouting the country for information. During any period of operations an efficient cavalry may undertake raids. It will ravage the country, destroy property and supplies of the enemy or his adherents, break communications and get information, decoy his cavalry from where its presence is inimical, disturb his plans, perhaps even causing detachments from his main army, and damage his morale and help its own.

Tactically, cavalry is well adapted to advance and rear guards. In battle it has as much usefulness as ever. The power of modern arms has increased the difficulty of choosing the moment for cavalry on the battlefield, but the problems still remain. The equipment of cavalry with the magazine carbine (in our service it is to be identical with the infantry rifle) has greatly increased its efficiency. The fire of dismounted cavalry is as effective as that of infantry.

The open order fighting of infantry gives cavalry a chance it never had when squares could be formed against it. The loss of life in battle has been diminishing in proportion to the numbers engaged as projectile weapons have improved. Considering the horse a missile of the cavalry, the reduced caliber gives it an advantage over other days. Who chooses a thirty-caliber Krag to shoot tigers, if he can get a twelve-bore rifle? What officer who knows the Moro, will risk the thirty-eight-caliber revolver if he can get a forty-five? And the object is the same, to stop a charging animal. The small bullet may perforate bones without fracture, and in any case may leave life enough in the horse to bring him to contact with his rider's enemy.

When the infantry of the main bodies clash, the cavalry passes to protect the flanks of the army. From there it may be hurried where its fire action will be of use in the line. It may charge the opposing cavalry in any circumstances under which cavalry has ever charged it. When may cavalry charge infantry? Charging cavalry now needs nearly three minutes to cross a fire space of about 1600 yards while the rifleman is firing fifteen to eighteen shots. The maneuver instructions for 1904 assume that fresh infantry firing over an open plain with magazine rifle will inflict losses of one and one-fourth per cent. per minute on mounted troops moving in the line of fire at charging gait, at five hundred yards. If you balance the added accuracy they will have under 500 yards against the lack of it from 500 up to 1600 yards, the losses will not stop well trained and patriotic cavalry. No moral effect on either side is considered. But battles are not decided by arithmetic. The instinct of self-preservation is as strong in a man with a magazine rifle as it was in a cave-dweller carrying a club. In the best of foot soldiers there still lingers a trace of that dread of the trampling hoofs of charging squadrons which has existed since men first went to war on horses. Cavalry in battle is used in smaller bodies than formerly. It appears from the flanks in small flexible columns which admit of a rapid deployment into line. Infantry in extended order is particularly vulnerable to attacks on its flanks. Cavalry may charge to roll up

a firing line or compel an unfavorable formation. When infantry have nearly spent their ammunition, when exhausted by rifle or artillery fire, or in retreat, or when it is of poor quality or surprised, there is every prospect of the success of a charge. Cavalry has in all time charged unshaken infantry to enable its own to arrive or get away, and even in the most hopeless case it will be useful to the extent that it draws fire or causes delay. The cavalryman, like every other soldier-man, must be prepared to make sacrifice. When infantry fires against infantry or two artilleries oppose each other, each is too occupied to watch the enemy's cavalry, which may thereby gain its flank or rear unperceived. Carefully trained, armed and mounted, the cavalryman should believe that no infantry can stand his charge, for even against unshaken troops who shall say what infantry is shaken and what not? Fine troops from an exterior view may have lost heart and morale. Arms have improved, trajectories have flattened and powder no longer smokes, but the man behind the gun is the same old kind of a man. Proportionally he has not improved with his rifle. The lifted veil of smoke now shows him what was hidden in other days, the dead and wounded, the ghastliness of torn limbs, gaping wounds, and the ebbing of the crimson life-tide. There still comes a time when tension and exertion long sustained, the loss of comrades, the cries and groans of wounded, unnerve the soldier, no matter how recent the patent of his rifle, and make him the prey of charging horsemen.

The cavalry of to-day is conspicuous for its self-reliance. With all the dash of the old days, it charges with saber or revolver in hand, and carries its infantry support in the carbine scabbard.

#### DO WE NEED CAVALRY?

With a peace army that is only a nucleus for one of volunteers, the proportions of the several arms differ from those of an army complete for war. The cavalry and artillery in our peace army should be relatively greater than the infantry. Cavalry is the arm needed first, and it takes the longest to create. Business sense, sanctioned by the practice of all

the great military nations, dictates that we have least relatively of that which can be most quickly replaced. The cavalryman must be taught the use of three weapons and the care and use of a horse. It is the arm which ought to be kept in a constant state of preparedness for war. This is why the great Continental powers maintain expensive hosts of cavalry in long years of peace. Cavalry cannot be improvised. Mount a poor rider with pack in front and behind him, hang on a saber, revolver and carbine, and you no more have a cavalryman than you can get a doctor by clothing a man in professional garb and arming him with a box of pills. Our strength in war lies in the Volunteers. The infantry of the National Guard reaches into many thousands. The cavalry and artillery number but a few hundreds. The National Guard and our Regular Army will form our first line in war. The expense determines that the Nation shall furnish the mounted branches while the Guard assists with infantry. In 1898 there were five volunteer cavalry regiments and some scattering troops, while the infantry went beyond two hundred thousand. There are several hundred military schools and colleges scattered through the country, some government aided and some private. All of them give infantry instruction, some add artillery, but less than a dozen profess to instruct in cavalry. In every other business the experience of the old and wise is valued. We either reject the practice and belief of the older military nations or must maintain a force of cavalry which, when combined with a proper amount of artillery, the thirty regular infantry regiments and those of the National Guard, shall form a well balanced, correctly proportioned force for our first line in war. Surely we should follow this policy.

Organization in proper numbers must precede action, or even the preparation for action, by practical and theoretical instruction. No matter how scholarly and dutiful in peace, nor how dashing and devotedly patriotic her cavalry may be in war, there is something to be done by the Nation in properly utilizing such qualities, or they may but lead to her misfortune through the wasteful sacrifice of some of her best blood.

## SIMPLER COMMANDS IN THE CAVALRY DRILL.

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BY CAPTAIN SAMUEL D. FREEMAN, TENTH CAVALRY.

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THE object of military commands is to secure the orderly execution of prescribed movements in drill or evolution. To insure this result, the command should accurately describe in military terms the movement to be executed; its language should be such as clearly to distinguish this movement from all others; it should be as brief as is consistent with the preceding conditions, and, finally, it should conform to a consistent system of military terminology. That is, the essential elements of a good military command are clearness, brevity and conformity to system, stated in their order of importance.

Generally the commands in our very admirable drill book conform pretty well to all these elements, but I believe that, particularly in regard to the last two named, there is still room for improvement. This seems to me particularly true of commands in the "evolutions of the regiment," and in a lesser degree of those in the "school" of the squadron and of the troop.

Military formations are of three classes, as described in the definitions of the drill book, viz.: order in line, order in column, and order in echelon. The last may be considered as a variation of either of the other two. Either may consist of elements, or units of various forms and dimensions, as is readily seen. The designation of either class of formation and of the units which compose it is a complete description of that particular formation to the military man. The object of the whole series of commands in the manual is simply to tell the different units of the organization how and when to change from one position to another, or from one of these formations to another, and the cases are rare in which

anything more than a brief indication of the movement and a signal for its commencement is required or desirable.

It will probably be conceded at once that the largest organization that can safely be maneuvered by a single voice or trumpet is the squadron, and that, consequently, the squadron must be considered the largest tactical unit of maneuvers. Commands, therefore, for the evolutions of the regiment should be addressed to the majors, and the squadrons should move to the execution of the evolution at the command of their majors. This is provided for, of course, in the drill book in a great many cases in a most admirable way, but in others it is made difficult. Majors are required to repeat the commands of the colonel and then to give the commands necessary for the movement of their squadrons. Now in some cases the colonel gives long, complicated commands, which include those for the movement of a particular squadron, which are identical with those of the major of one squadron, but which do not concern the others at all. To repeat such commands according to the rule is very cumbersome and possibly confusing.

Such a command, for example, is: 1. *Column of fours,* 2. *First troop, first squadron,* 3. *Right forward,* 4. *Fours right,* 5. MARCH.

There is no real necessity for such commands.

In order to avoid the repetition of such complexities, it should be sufficient for the colonel to indicate in general terms the character of the movement to be executed and to signal or command its beginning. This is most admirably done in such commands as, 1. *Line of fours,* 2. *On (such) troop (such) squadron,* 3. MARCH, though there is really no good reason why the colonel should descend to such particulars as specifying the troop which shall be the base of the movement.

It is an accepted principle of the drill that, after the formation of the squadron, no cognizance is to be taken of the relative order of troops in the squadron or of platoons in the troop (Par. 704). It is equally well established that after the formation of the regiment, no cognizance is to be taken of the relative order of squadrons in line or column. It

should, therefore, in general, be a matter of indifference to the colonel in what order the troops or platoons of a squadron may be found upon the completion of a movement. Some simple general rule would suffice to regulate those matters in all cases except where the colonel, for reasons, chooses to specify the order of movement with more particularity. All that is desirable might be accomplished by a modification of Par. 851, directing in more general terms that majors shall conduct their squadrons to position by the most direct methods of the school of the squadron that are applicable to the particular case. This would give both the colonel and the majors latitude in handling their commands.

The principal cases in which simplification of commands is possible and desirable are: (1) Those which involve formation of column, by troops, platoons or fours; (2) those which concern formation of line of fours, or line of platoons in column of fours, and (3) those for changing front.

Take the third case: The change of front by a single command is provided for in only one case, that of the regiment in line of masses (Par. 903). In all other instances it requires two commands and two movements to accomplish the same thing, and this without gaining anything in time, simplicity or directness. If the movement is a desirable one, as it seems to be, there is not the slightest objection, so far as I can see, to using the same form of command, as in Paragraph 903, for a regiment or squadron in line of any kind (Par. 732, 904), and other similar cases.

Paragraphs 749 and 771 require no change, though it is to be noticed that the figure in the text for Paragraph 771 is wrong for the movement there laid down, but corresponds exactly to "Squadron right." For a simple change of front, the commands suggested might well be introduced.

In movements of the second class above, viz.: those involving formation of line of fours, it is to be remarked that there is no essential difference between a line of troops in column of fours and a line of platoons or squadrons in column of fours (Par. 881), and all are provided for in the text.

If it be desirable to restrict the term "line of fours" to the line of troops in column of fours, it is certainly permissible and, I think, advantageous to say "line of fours by platoon" or "line of fours by squadron"; neither expression would cause the least confusion in the mind of any one who knows what is a line of fours.

The present command seems to me very clumsy and more liable to produce error than if such a formation were designated "a line of fours by platoon." Thus (Par. 774) the command might be: 1. *Right front into line of fours by platoon*, 2. MARCH. And Par. 746: 1. *On right into line of fours by platoon*, 2. MARCH. And so for other cases. Similar commands would be good in the school of the troop. (Pars. 615, 616.)

In regard to the first class of movements above—forming columns of various units—it is desirable to be able to form column to the front or rear as well as to a flank. This may be done in a manner entirely similar to the formation of the column of fours forward or to the rear in the troop drill. In this connection, it may be remarked, there seems to be no command in the "school of the regiment" for advancing in column of fours from line.

The regiment, or squadron, being in line, to advance in column of fours, platoons or troops, the following simple form of command is sufficient: 1. *Column of fours (platoons or troops)*, 2. *Right forward*, 3. MARCH. If by fours, the major of the right squadron gives the same command for his squadron, and the movement is executed as in Par. 720, school of the squadron. The other squadrons move by fours to the right and follow the first.

If by "troop or platoon" the right unit moves forward as before, the remainder execute fours right and then fours left in time to follow the leading unit in column. There is no complexity, no delay, no multiplication of commands, no introduction of new things.

Being in line of columns or line of masses, to march in column of fours forward or to a flank (Paragraphs 748, 896, 757, 758 and 901) the command may be: 1. *Column of fours*, 2. *Right (or left) forward*, 3. MARCH. Or: 1. *Column of*

*fours,* 2. *On first (or fourth) troop,* 3. *Right (or left),* 4. MARCH. So from line of platoon columns, to march in column of platoons (Pars. 772 and 910) the command may be: 1. *Column of platoons,* 2. *Right forward (or right),* 3. MARCH. And in Par. 1047, review: 1. *Pass in review,* 2. *Column of platoons,* 3. *Right,* 4. *Guide right,* 5. MARCH.

Other changes suggest themselves, but these cover about all of the cases where simplification may be urged as decidedly advantageous. There might, for instance, be something said in favor of returning to an old expression, "by fours," inasmuch as the same very accurately descriptive form of words is used to advantage in such cases as "by file," "by trooper," "by twos," "by platoon," and is perfectly familiar to everybody. For the sake of uniformity, or "system," it might be better to adopt the somewhat longer expression, "column of fours," even for the troop, and say: 1. *Column of fours,* 2. *Right forward (or rear),* 3. MARCH. And: 1. *Column of fours,* 2. *Right,* 3. MARCH. There is a tendency, too, and it seems to me a very natural one, to drop the word "forward" in putting a column in motion and changing direction at the same time, as there is really no more reason for saying "forward, column right" than there is for saying "forward, right turn."

Effort should be made to simplify and generalize the commands of superior officers, leaving to subordinates the duty of giving the proper commands for their units in turn. I believe that this, in addition to other advantages, would tend to secure greater alertness at drill on the part of every officer and man.

The commands of the colonel should conform more in style to those laid down for the brigade commander—direct, simple indications of the movement to be executed—for the reason, as before stated, that it is practically impossible for one voice or one trumpet to control the movements of a full regiment of cavalry.

It may be worth while to call attention to an apparent exception to the above statement. In the formation of the regiment, the adjutant gives the commands for drawing saber and presenting to the colonel; whether the adjutant,

being the mouthpiece of the colonel, is supposed to have a more powerful voice than any one else, is not determined.

It would seem quite appropriate to omit the saber present at formation and allow the adjutant to report when the regiment is formed, as is done in the case of the squadron. If it is desired, however, to retain the present, the majors should command "draw saber" while the adjutant is proceeding to join the colonel, and the command "present saber" as soon as the adjutant takes his post. When the salute is acknowledged, they should bring their squadrons to "carry saber" and await the pleasure of the colonel.

## THE ORGANIZATION OF AN ARMY.

BY CAPTAIN JOHN P. RYAN, SIXTH CAVALRY.

THE purposes to be subserved by military organization may be divided into two general classes: First, those which relate to the employment of the army in battle, and second, those which relate to its general maintenance both in peace and war. The first gives rise to what is termed the tactical organization of the army; the second to its administrative organization. Originally these two forms of organization were often quite distinct; thus, companies and regiments were purely administrative units, while battalions were only employed in war. To a greater or less extent, this distinction continues to exist in most armies at the present time, as in the regiment of artillery and in the heavy infantry regiments of some of the Continental armies.

It is now recognized that the best organization for an army is that which serves both the tactical and administrative needs, and this is the direction of all modern improvements in organization. Success in battle being the ultimate object of all armies, and this depending mainly upon the facility with which the army can be commanded and maneuvered on the field, it follows that tactical considerations are of vital importance in determining the organization to be given to the army. It is, of course, desirable that the arrangement and grouping of the troops should facilitate the important questions of supply, sanitation, etc., but these and all other administrative needs must be regarded as secondary.

Organization, in the most general sense, means the bringing of independent bodies into such interdependent relations with one another as to form a single organic whole, in which all the parts will work together for a common purpose. As

applied to an army, the independent bodies are primarily the individual soldiers, and the tactical purpose to be accomplished by organization is so to bind together the general who commands and the soldier who executes that the whole may act as a unit in accordance with the wishes of the commander. The manner in which it is sought to bring about this result is practically the same in all modern armies, and may be briefly outlined as follows:

First, those individuals who are to use the same weapon are assembled in small groups and placed under a leader by whom they are trained in the use of the weapons and by whom they are commanded in the fight. Several of these groups are then united to form a larger group, and these are again combined to form still larger groups, and so on, each unit-group and each combination of groups being commanded by a leader who receives his orders from, and is subordinate to, the commander of the next larger group of which he forms a part.

The system of organization now in use is based on the experience of centuries of warfare. It has been a progressive development, keeping pace with improvements in arms and methods of war and the ever-increasing size of armies.

To a better understanding of present methods, it seems advisable to review briefly this development. Following the downfall of the Roman Empire and for many centuries thereafter, practically no military organization existed in Europe. While wars were frequent during the middle ages, no permanent armies were maintained, and the profession of arms was the occupation of adventurous spirits who were banded together in companies, sometimes four and five hundred strong, under the leadership of more or less renowned captains, and who were employed by kings and princes in their petty wars. Armies were raised only when war was imminent, and were made up in great part of these mercenary bands, in part of national levies, and later of feudal contingents. Companies and regiments were sometimes formed for administrative purposes, but tactical organization there was none. The battle was a mêlée and the troops, once en-

gaged, could only be withdrawn when one side or the other was defeated.

With the collapse of feudalism and the consequent growth of national life, standing or permanent armies began to be maintained. In the beginning, these armies were often made up of the old bands of wandering mercenaries, and while they were organized into companies and regiments, each company continued to carry its own banner, indicating its real origin, and there was no uniformity either in the strength of the company or regiment. With the introduction of regular and scientific tactics, which followed as a natural consequence to the standing army, the advantage of bodies of uniform strength became apparent, and battalions and squadrons were introduced as the fighting formations of infantry and cavalry.

Originally, battalions were dense masses numbering several thousand men and containing many regiments. As changes in arms led to the adoption of more extended formation, it became necessary to subdivide into smaller fractions, and battalions were gradually reduced in size until they became mere fractions of a regiment. Finally, when the advantages of uniform and permanent organization were more fully understood, regiments were also made of uniform strength and the battalion became a fixed fraction, usually one-half or one-third of a regiment, but still retained its distinct character as a tactical unit; while for administrative purposes, recruiting, payment, clothing, etc., the regiment was the unit.

About the latter part of the seventeenth or beginning of the eighteenth century, brigades, formed of several battalions, were first used; later, divisions, composed of the several arms, were occasionally employed in battle. It was not, however, until the latter part of the eighteenth century, during the wars of the French Republican armies that the division as we now understand it, having its permanent commander and staff and proper proportion of the different arms, became a permanent feature of army organization.

Prior to the introduction of brigades and divisions, the army was merely an aggregation of battalions and regi-

ments. For the battle, the army was formed with an advance-guard, a first and second line, and a reserve. It was also divided into wings, there being distinct commanders for these bodies as well as for the infantry, cavalry, and artillery. The higher commanders were all attached to the general headquarters, and were detailed for these subdivisions of the army by the day, and there was no bond of union between the general and his command, as there is between a general and his division.

In 1805 Napoleon formed the first army corps, which, because of its utility in handling large armies, was shortly after adopted by the other nations. Later developments have been the grouping of separate armies under the command of a general-in-chief.

This brings us up to the present time and to a consideration of the armies of to-day. The various groups into which an army is subdivided arrange themselves naturally into two classes: First, those groups which are made up entirely of one arm of the service, and which have a certain degree of permanency, as companies, squadrons, battalions, regiments; and, second, those groups which are formed by the combination of the several arms, and have a temporary character, as brigades, divisions and army corps. The lesser groups constitute the special organization of the several arms of the service. The larger groups relate to the organization of armies. This distinction has been recognized in the preparation of this paper, and the subject is treated under the two sub-heads: "The Special Organization of the Several Arms," and "The Organization of the Army."

Beginning with the company, which is the smallest group of infantry and which has its counterpart in the troop or squadron of cavalry and the battery of artillery, its strength is determined within limits by the requirement that it should be able to act as a unit in the battle under the direct command of a single leader. Thus, at the present time, we find companies consisting of from 100 to 125 men led by a dismounted captain, as in the British army and the army of the United States; and of 200 to 250 men commanded by a

mounted captain, as in the 'Continental armies and the army of Japan.

Before the development of the present dispersed order of fighting, and when the attack was made by the battalion as a unit in a deep column of subdivisions, the size of the company was of very little importance from a tactical point of view. In some cases, as in the army of Frederick, the company organization was entirely ignored in the battle, his battalion of five companies being divided into eight platoons or sections for the purpose of drill and fighting. At this time the company was merely an administrative unit consisting usually of about one hundred men.

With the development of the line attack, the difficulties of command were immensely increased. It was no longer possible to handle the battalion as a single unit and its rôle in this respect was gradually assumed by the company. As the new rôle of the company became recognized, the advisability of adding to its strength and thus increasing its efficiency in independent action became apparent, and it has been steadily augmented until it has attained its present size of 250 men, which is probably a maximum under present conditions of warfare. The company has, in effect, replaced the battalion as a fighting unit, and the battalion of to-day is the brigade of the eighteenth century.

With the development of extended order, the number of men that can be directly influenced by a single leader has rapidly diminished, and while it may be possible for a mounted captain to exercise direct command over two hundred dismounted men, he can not exert over all the men, when deployed in extended order for battle, that personal influence and control necessary to give effect to his commands. The company is therefore subdivided into several platoons, each led by a lieutenant, the platoons are divided into sections led by sergeants, and finally the sections are divided into squads of eight to twelve men under the charge of corporals, thus carrying out the idea of personal leadership to the last man.

The company is also an important administrative unit. The captain is responsible for the discipline, instruction,

supply and general maintenance of his company, and the fighting efficiency of the army largely depends upon the character of his work.

The next larger group of infantry is the battalion, which in the armies of all the great powers contains on a war footing about one thousand men, and is formed by uniting four strong companies, or eight weak ones, as in the British battalion. The only exception to this rule is found in our own army, where the battalion is made up of small companies and has a war footing of about five hundred men. During the War of the Rebellion, our battalion was in some instances organized as in the British battalion at the present time, that is, of eight small companies aggregating about eight hundred men, and our experience appears to have been that of foreign armies: that the battalion was too large to be handled as a fighting unit and contained too many companies to be treated as a group of separate units. Upon the outbreak of the Spanish War, the battalion was re-established for the infantry, but was reduced to four companies numbering about four hundred and fifty men. While the battalion may be considered to have lost its function as a fighting unit, it is still referred to by most military authorities as the tactical unit of infantry. Used in this connection, it appears to mean the smallest body of infantry capable of carrying out a definite object in the attack through its several phases.

The term, tactical unit, as used at the present time, is not susceptible of exact definition. By some authorities it is defined to be the smallest fraction of a body of troops which can fight independently and perform some specific duty on the battlefield, the individual men and horses composing it being personally known to the commander, who must, moreover, be able to direct it by word of command. By others it is used in referring to any tactical group which forms one of the main subdivisions of a larger group; thus the regiment is sometimes called a tactical unit of the brigade; the division, the tactical unit of the army, etc. Colonel Wagner says the tactical unit on which the organization of an army should be based is the largest body of troops that can be directly commanded by a single leader and at the same time

be able to appear in close order on the battlefield without quickly incurring ruinous losses from the enemy's fire.

However, most authorities agree in considering the battalion, the squadron and the battery as the tactical units of the different arms. Referring to the small size of our company and battalion as compared with that of all other large armies, I offer the following suggestions:

It is a fundamental principle of tactical organization that the number of independent units in an army or other body of troops should be as small as possible—this to facilitate the transmission of orders and the execution of commands.

As a corollary to this, it follows that the strength of any independent unit should be a maximum consistent with the natural limitations of the case. If a mounted officer, assisted by four lieutenants, can maintain effective control over two hundred men in battle, then it is advantageous and economical to have this organization. With this size for the company, the battalion would naturally be 1,000 men, for the battalion commander can handle four companies as readily as the brigade commander can maneuver four battalions or the division commander several brigades. On the other hand, the difficulties of command and control are greatly increased with untrained soldiers; smaller units and a greater proportion of officers are necessary. This would seem to fit our case.

The battalion is not ordinarily an administrative unit, though in the British army it replaces the regiment in this respect. In our army it has not been customary to retain the battalion organization in time of peace, but by the law of March 2, 1901, the infantry regiment was organized with three battalions, and an administrative staff consisting of a commissary and quartermaster was assigned to it. To this extent the battalion has become with us an administrative as well as a tactical unit.

The regiment, which is made up of two, three or four battalions, was originally an administrative unit solely, and it still retains that character in the British army, where it has no place in the order of battle. In practically all other modern armies, the regiment is now regarded as an ideal tac-

tical unit. The German Infantry Drill Book very aptly describes the importance of the regiment in the following words:

"The regiment is, owing to its centralized form, the homogeneity of its staff officers, the number of parts comprising it (three or four battalions) and its historical associations, pre-eminently adapted to executing in a uniform manner any tactical task that may devolve upon it. The regimental system facilitates the tactical coöperation of its component parts and the regulation of the proportion of infantry which it may be desirable to employ in the first line."

To which I may add that the regiment is to the officer what the company is to the soldier, "his home," and the spirit of comradeship developed by association in time of peace proves the strongest tie in holding the regiment as a unit in the fight.

In foreign armies it is usual to maintain a depot battalion in each regiment. In peace time this battalion exists in skeleton form, but when war breaks out it is officered and becomes the recruiting depot for the regiment. This was attempted for the regiments on foreign service in our army in 1899, but the exigencies of the service caused it soon to be given up. It is probable that under more favorable circumstances it would be adopted.

#### CAVALRY.

In the cavalry the squadron is the basis of tactical organization and in practically all armies but our own it has a war footing of 150 to 175 men.

Marshal Marmont, writing on this subject more than half a century ago, said: "The fighting unit of cavalry is called a squadron, and the rule for determining its strength is to unite the greatest mobility with maintenance of order. A squadron having too great a front would easily be thrown into disorder by the slightest obstacle, and every troop in disorder is half conquered. Experience proves that the best formation, that which most completely unites strength and consistence with great facility of movement, is a squadron of forty-eight files, ninety-six men, divided into subdivisions

of twelve files each. The inconsiderable number of men and horses permits that arrangement in the cavalry which would be impossible in the infantry, that is, the fighting unit is the same as the unit of administration."

Our own cavalry has at different times been organized as here outlined; the last time in the War of the Rebellion when the cavalry regiments were formed of three battalions of two squadrons of two companies each, making six squadrons of 150 men to the regiment. After the war the present organization of three squadrons to the regiment was adopted, probably to conform to the infantry organization. In foreign armies the squadron is both a tactical and administrative unit; it is usually commanded by a major with a captain second in command, and is subdivided into several troops commanded by lieutenants. With us the troop of one hundred men is the administrative unit. The cavalry regiment abroad is made up of from three to seven squadrons, one of which is usually a depot squadron.

#### ARTILLERY.

The battery of six guns is the basis of the tactical organization of the field artillery.

With the advent of the rapid fire field gun it is probable that the battery will be reduced to four guns. This reduction has already been made in our service by a recent executive order, and is made advisable by the increased difficulties of regulating and controlling the fire of guns which can deliver twelve aimed shots per minute, as compared with the old gun having a capacity of only two or three rounds. Moreover the increased consumption of ammunition will demand additional ammunition wagons and teams, and will add materially to the personnel of the battery.

Two or more batteries working together under one command constitute the battalion of artillery. Our battalion of three batteries corresponds to the British "brigade-division." The battalion organization now existing in our field artillery is purely for purposes of instruction and administration. The regiment of artillery, recently abolished in our service

but still retained in many foreign armies, is an administrative unit solely.

By the reorganization act of 1901, machine gun batteries are declared to be part of the field artillery, though no tactical organization for machine guns has yet been adopted. The tactical use of machine guns is at present in an experimental stage. The British have organized their machine guns into sections, which they have attached to the infantry and cavalry brigades, and this is the direction of our experiments at this time.

#### ENGINEERS.

In the United States Army the engineer troops accompanying the army in the field perform the duty of sappers, miners and pontoniers. In most European armies they are also charged with the duties of signaling, and in some instances they have the additional duty of the management of the railroads within the theatre of operations. Engineer troops are organized into companies, battalions and regiments in the same manner as infantry. The strength of the company varies with the particular character of work it is intended to perform, and usually contains from 250 to 500 men. It is probable that our regular engineer troops will shortly be organized into companies of pioneers and pontoniers, the pioneer company to consist of 165 men, twenty-five of whom shall be mounted, and the company to be equipped with intrenching tools and explosives. The ponton company to consist of 150 men, five noncommissioned officers being mounted. The companies are united into battalions composed of three pioneer and one ponton company. When serving with the cavalry the engineer troops will be mounted.

In the United States Army it is usual to supplement the regular force by details from the line of selected individuals, or by transfer of entire organizations. Both of these methods were pursued in the War of the Rebellion, but upon the outbreak of the Spanish War special enlistments of trained mechanics were made and they were organized into a brigade of three regiments, equipped as infantry.

## SIGNAL CORPS.

The Signal Corps is charged with the management of the field telegraph and telephone, the military balloons and the service of signaling generally. For service in the field signal troops will be organized into companies of 150 men, who will be mounted when serving with the cavalry. These signal companies with us correspond to telegraph sections of the engineer companies in foreign armies.

## MEDICAL CORPS.

In all modern armies there is provided for the army in the field a complete sanitary organization which usually comprises detachments of the Hospital Corps attached to batteries, battalions and regimental field hospitals, including a bearer and ambulance section for collecting the wounded and conveying them from the dressing stations to the field hospitals; an advance medical supply depot which accompanies the first line of supply; the hospital transport, railway trains, hospital ships, etc., by which the sick and wounded are conveyed to hospitals along the line of communication or to the base, and, finally, the base hospitals and convalescent camps.

This completes what might be termed the special organization of the several arms and we have now to consider how these squadrons, battalions and regiments shall be assembled to form an army.

In the organization of an army the main points to be determined are: What shall be the size of the army? What shall be the proportion of the different combatant arms and special troops? How shall they be combined? And finally, what shall be the primary subdivisions of the army?

When we come to consider the proper strength of an army we find a general concensus of opinion among military writers, supported by the practice of nations, that a single army should not exceed 150,000 fighting men. Experience has demonstrated that very large armies have less cohesion and flexibility than smaller ones, and that the rapidly increasing difficulties of command soon tax the ability of the

average leader. Larger armies have many times been formed, but usually under force of circumstances and to meet exceptional conditions. Where the force put in the field exceeds this number it is customary to divide it into two or more separate armies, and, where these separate armies have the same objective, to combine their operations under a general-in-chief. This principle of the division of large combatant forces into several armies has been exemplified in all recent campaigns; was practiced by both the North and the South in the Rebellion, and is now being carried out in the Japanese army in Manchuria.

#### PROPORTION OF THE DIFFERENT ARMS.

In determining the proportion of the different arms that shall go to make up the army, we find that there is no fixed rule. In a comparison of many field armies of the past century, if the infantry be represented by unity, the cavalry has varied, usually from one-fourth to one-tenth, while the artillery has varied from two to five guns per thousand combatants; and even these limits are often exceeded.

In Johnston's army during the Atlanta campaign there were 144 guns to 53,000 men, or from two to three guns per thousand, while the cavalry was from one-fourth to one-fifth as numerous as the infantry. In Sherman's army at the same time the cavalry was one-seventh as strong as the infantry, and there were about two guns per thousand. At a later period, during the march to the sea, the guns were reduced to one per thousand and the cavalry to one-fifteenth of the infantry.

In the Union army at Gettysburg the cavalry was almost one-fifth and there were from two to three guns per thousand. These proportions were about the same as the Confederate army. The act of Congress of July, 1861, providing for the mobilization of 500,000 volunteers, directed that not more than one company of cavalry or artillery should be raised to every regiment of infantry. Actually there were organized on the Union side during the war 1,700 regiments of infantry, 272 regiments of cavalry and 78 regiments of artillery.

According to Napoleon, the cavalry should be from one-fourth to one-fifth as numerous as infantry, the artillery one-eighth, the engineers one-fortieth and the train one-thirtieth. In the Second German army in 1870, which numbered over 250,000 men, the cavalry was between one-fifth and one sixth, the artillery from one-seventh to one-eighth, the engineers about one twenty-second, the train one-thirteenth and the sanitary troops one-twenty-fifth.

Applying these general averages to a particular case, an army of 100,000 men might be composed as follows:

Infantry .....	65,000
Cavalry .....	12,000
Artillery (300 guns) .....	9,000
Engineers .....	4,500
Sanitary troops .....	4,000
Signal troops .....	600
Train .....	5,000
Total .....	<u>100,100</u>

The English army in South Africa was composed as follows:

Infantry .....	62,369
Cavalry .....	16,431
Artillery (270 guns) .....	7,930
Engineers .....	3,100
Train troops .....	5,750
Total .....	<u>95,580</u>

#### PROPORTION OF THE THREE ARMS.

The relative numbers of the infantry, cavalry and artillery will vary with many conditions, principally, however, with the character of the country in which the operations are to be conducted, the composition of the enemy's forces, and the adaptability or otherwise of the people for a particular arm.

In a difficult, mountainous country, having few roads, the cavalry and artillery would find little scope for their operation and would be proportionately diminished. On the other hand, in an open country, against a mounted enemy, a large proportion of cavalry and artillery is needed. The influence of conditions of this character on the composition of an army

was very markedly shown in the war in South Africa. General Kitchener, testifying before the commissioners on the conduct of the war, said: "Except in Natal, and even there to some extent, the infantry were at a great disadvantage against mounted enemies, and for this reason, in the latter part of the war, all operations were carried out on the British side by mounted men."

Lord Roberts, testifying before the same commission, said: "What I think is, that in all future wars we should require a far larger proportion of mounted men than we have ever had hitherto, and that the cavalry must be prepared to fight on foot much more than they have ever done before."

In the Japanese army in Manchuria at the present time the cavalry force is insignificant. This is due to the fact that the Japanese are indifferent horsemen and there are few, if any, horses in Japan fit for cavalry service.

Having determined upon the strength of the army and the proportions of the different arms, the next question to be decided is the manner in which the several arms shall be distributed in forming the higher tactical units of the army. Whether, for instance, fractions of the army shall be made up entirely of cavalry and artillery, and others of infantry only, or whether the cavalry, artillery and infantry shall be distributed uniformly among the main subdivisions according to their strength.

#### CAVALRY.

Until the latter half of the nineteenth century it was the usual practice to form a large part of the artillery and cavalry into reserves, which were held in rear of the army and under the immediate command of the general commanding. This frequently resulted in withholding just that much cavalry and artillery from the fight, and history contains many instances of lost opportunities due to the impossibility of getting these reserves into action in time to be of any use. These reserves have now practically disappeared. The cavalry has found its proper place in front of the army instead of in the rear, and the artillery is gradually moving up to the line of battle; the artillery reserve gave way to the

corps artillery, which is in effect but a smaller reserve, and this in turn is about to be absorbed into the divisions.

Following the developments of the War of the Rebellion and the Franco-Prussian War, it is now generally recognized that the most advantageous use of cavalry is in screening the movements of our own army and gaining intelligence of the enemy. To do this effectively, the cavalry must operate well in advance of the main body, and its movements will, to a great extent, be regulated by those of the enemy. It must therefore be independent. These considerations lead to but one conclusion: the principal part of the cavalry must be organized into independent bodies under their own leaders, only so much cavalry being assigned to the infantry divisions as is necessary for their immediate security.

In fixing the size or strength of these independent cavalry bodies we are influenced by several considerations. Experience in past wars has demonstrated that very large bodies of cavalry are difficult to handle and supply, and, moreover, they lack the mobility and cohesion of smaller bodies. Marmont, whose ideas are always carefully considered, says: "I place at 6,000 horse the utmost force of cavalry manageable."

During the Napoleonic wars great masses of cavalry were frequently used. In the grand army which invaded Russia, Murat commanded a cavalry reserve of four corps, numbering 40,000 men. This use of cavalry has now practically disappeared, and it is rare indeed to find 10,000 cavalry in one body. During the War of the Rebellion the largest body of cavalry united under one command was 13,000, the cavalry corps of General Wilson in 1865. The present tendency is still further to reduce this strength, and the cavalry is now usually organized into divisions of about 3,600 men. This was the organization of the German cavalry in the Franco-Prussian War and of the British cavalry in South Africa. This is also the organization proposed by our Field Service Regulations, though our cavalry division has a strength of 9,000 men, our brigade corresponding to the European division. It may, therefore, be accepted that the cavalry corps will rarely be organized in future, and that the

cavalry will be organized into divisions and placed under the orders of the army commander.

The present accepted rôle of cavalry, that of acting as a screen to the movements of the army, will often take it many miles in front of the main body, and if it is not to be held back by small detachments of the three arms its power of resistance must be increased. It is, therefore, usual to assign to each division of cavalry several batteries of horse artillery. In European armies, infantry in wagons sometimes accompanies the cavalry division.

#### ARTILLERY.

When we come to consider the proper grouping of the artillery a different course of reasoning prevails. While artillery produces its greatest effect by the concentrated fire of many guns, we read of immense groups of from twenty to thirty batteries in action under one command, as at Gettysburg and at Wörth and Sedan; yet, if the artillery occupied its place in column in large masses of this size, it would often be difficult, or even impossible, to find suitable positions for its employment, and much of the artillery would be kept out of the fight, or would have to be distributed along the front of the battle. It is therefore better to distribute the artillery in groups of not more than eight to ten batteries among the infantry columns, where it marches near the head of the columns ready to come quickly into action, provision being made to form larger groups under a single command when the favorable opportunity arrives. This increased distribution of the artillery is also favored by the great range of the modern field gun, which makes it possible to concentrate the fire of widely separated batteries on a single objective, and by its increased mobility, which enables the batteries to concentrate rapidly when desired.

At an earlier period when the field gun had a comparatively short range and was difficult to move from place to place on the field, it was, perhaps, necessary to keep the artillery massed in reserves, if its fire was ever to be concentrated on a single point.

## INFANTRY.

Turning now to the infantry, which, under modern conditions of warfare, is by far the most numerous and most important arm of the service, it is with the proper grouping of this arm that army organization has mainly to do.

The theory of the formation of the modern army is that it shall consist of several fractions or units, equal in size and composition, complete in all parts, and able to act independently at any time. It is by this arrangement that the army is rendered flexible; thus, it may be moved in several columns on parallel roads, and if any column be attacked, it will be able to maintain itself until supported by the others; or, if it be necessary to detach a portion of the army, it will not be necessary to gather together infantry, cavalry and artillery and create new staffs, etc.

This fraction or unit is the "division," sometimes called the "infantry division," and of which Napoleon said, "It should be able to fight unsupported for at least an hour." Modern opinion puts it at about twelve to sixteen thousand infantry, somewhat more than the Emperor was accustomed to give it. Such a force will have a battle front of from two to four miles, and its length in column will be such that it can deploy for action within three or four hours.

In order that the division may act thus independently it is necessary that it be provided with cavalry and artillery and a proper proportion of special troops; also a supply train carrying a reserve of ammunition and food and a complete administrative staff.

To facilitate the exercise of command and to give greater flexibility, the infantry of the division is subdivided into several brigades of two or three regiments each.

The following is the proposed organization of the division in the United States Army:

Three brigades of infantry.

One regiment of cavalry.

Six batteries of field artillery.

Three batteries of horse artillery.

One battalion of engineers.

One company of signal corps.

Four field hospitals.

One ammunition column, composed of three sections of twenty-one wagons each for small-arms ammunition, and two sections of twenty-one wagons each for artillery ammunition stores.

One supply column, composed of three wagon trains of twenty-seven wagons each, and one pack train.

When the army consists of 100,000 men or more, the divisions are assembled into army corps; this on the principle that five or six independent units is as many as one commander can efficiently manage. In an army of 150,000 men there would be ten such units; it is, therefore, better to organize the army into four or five corps, each containing several divisions. There is universal agreement that the army corps should not exceed about 30,000 fighting men. A body of troops of this size would occupy about fifteen miles in column of route, and would require an entire day to deploy for action.

When the army corps is created, it, in many cases, replaces the division as the unit of organization, and the number of cavalry, artillery and special troops with the division is proportionately diminished, the troops withheld from the divisions being united to form the corps cavalry, the corps artillery, the corps administrative troops, etc. This is the case in many European armies where the corps organization is maintained in time of peace. In such cases we find the division usually constituted as follows:

Two brigades of infantry.

One to four squadrons of cavalry.

Four to six batteries of artillery.

One company engineers.

One bearer company.

In either case, however, whether the corps is the unit of organization, having its own corps troops, or whether it is merely an aggregation of divisions, the total strength of the corps remains about the same.

Where the army corps is the unit of organization, if it be necessary to detach a division, a proportion of the corps

troops, cavalry, artillery and administrative troops are attached to it, and it becomes the reinforced infantry division, similar in strength and composition to the division proposed for our army by the Field Service Regulations.

Finally, when several army corps are united under a single chief they constitute an army. One or more cavalry divisions usually form part of such an organization.

## SURRA.

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Through the courtesy of General Wint and his aide, Lieutenant William L. Karnes, Sixth Cavalry, the JOURNAL has been furnished the following extracts from the exhaustive report on the disease of surra, made by the board composed of General Wint, Lieutenant-Colonel Ramsey D. Potts, Artillery Corps, and Lieutenant Karnes. The board not only made a thorough investigation of the disease in the Philippines, but also visited India, Burma and Java, and it is believed that their report contains more useful information concerning this fatal disease than anything ever before published on the subject. These extracts, which contain the gist of the report, must, therefore, be of interest to every American officer who has served in the Philippines, or expects to serve there. They are published by permission of the Chief of Staff.—  
EDITOR.

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**T**HIS disease has existed in certain sections of India for generations, notably on the northwest frontier and in the Punjab; an outbreak occurred in almost every district in India and Burma within the twenty years preceding 1897. It has been reported from the Persian Gulf, Tonquin, Korea, Egypt, Syria, Algeria, and Zululand, and latterly from Java, Borneo, Madagascar, Mauritius and other points; in fact the disease has appeared almost everywhere in the far East.

Dr. Lingard, in a report dated 1899, stated that there were also strong reasons for believing that animals had succumbed to this disease in Abyssinia, the Zambesi, East Africa, Australia, North America, Brazil and Southern Europe, but the reasons are not given.

It is impossible to assign a date for the first appearance of this disease in the Philippines, but it is believed that it is not of recent origin. It has doubtless existed there for many years unknown, under various names signifying fever, debility and emaciation, its marked characteristics. Careful inquiry during the past eighteen months amongst native veterinarians (so-called) and horse owners at many different points in the Islands, has elicited the fact that a disease

entirely similar to the one which has recently swept off nearly all the native ponies (*surra*), has existed in the Islands for many years in a varying degree from year to year, but generally epidemic every third or fourth year. It is unquestionably a fact that the disease attacked and carried off many native ponies in certain sections, notably Batangas, South Camarines, and Albay provinces in Luzon, and the island of Panay, before it appeared amongst American horses and mules at all; and it is also believed that it appeared at these and other points some months before animals in Manila were affected.

It is also well known that Dr. Nockolds, veterinarian First Cavalry, recognized and reported the presence of the disease months before. Dr. Nockolds was born in India, and was familiar with the parasite and disease from actual experience. Corroborative evidence on this point was obtained from American teamsters and packers who had entered those provinces with the first American troops and, on discharge, had taken service with the Quartermaster's Department, their service there being practically continuous, antedating the first appearance of surra amongst American animals, or glanders as it was generally called before the parasite was discovered. Whether or not this disease was epidemic in the Islands upon our advent or was imported afterwards, is a material point, and affects very closely the measures to be taken to prevent the spread of the disease or its further introduction, as the case may be. If recently imported, the problem of its extermination is greatly simplified; but the burden of proof is quite adverse to this theory, and it is believed that there are many infected districts throughout the islands which will have to be determined and then avoided, as in India and Burma. There the gravity of the situation and the deadly nature of the disease was at once appreciated, and the fact soon became apparent that they could not cure it. Hence, every effort was made to stamp it out by measures of prevention rather than cure. Exhaustive study and investigation showed that the disease was epidemic in certain districts and localities; these were noted and indicated by shaded areas on maps which were issued for the information

and guidance of all concerned. No military animals are allowed or kept within these districts, and grass is never cut therein for military use. The grazing of animals on the road or in camp is absolutely prohibited, except in places known to be uncontaminated, and pack animals which are not under individual control are provided with a muzzle, a practice which could be introduced in the Philippines with great benefit. It was a noticeable fact that surra many times appeared amongst the ponies of native grass cutters and attendants, who do not observe any precautions, without a case amongst military animals. In regard to water, great precautions have been taken to avoid danger from this source, even to digging wells on routes through infected districts, which native stock are never allowed to use, and to boiling the water under specially unfavorable conditions. Contact with native stock is avoided as far as possible. Even at this late date, when surra has not appeared among military animals for many years, mounted organizations marching to take part in the recent coronation ceremonies at Delhi, were required to make considerable detours to avoid passing through any of the infected areas.

In districts where the disease is epidemic, it will be impossible to prevent sporadic cases, but the spread of disease to government stock can be prevented by prompt precautions, and to this end all energies should be bent. As it is believed that the disease is endemic in the Philippines, every effort should be made to find out infected areas and similar precautions taken in regard to them. It will be practically impossible to maintain a mounted command in such a district without frequent recurrences of the disease.

It has been found impossible to learn whether the natives hold to any theory in regard to the origin of the disease here, but the low grounds were evidently regarded as dangerous during the rainy season, for it was the custom to drive all stock to high ground after the crop was planted, and, as far as possible, before the heavy rains began; but on account of the insurrection, and later the ladrones, this has been impossible for the last five years, and stock has been kept in the

lowlands, feeding and watering in the old rice paddies, overflowed and swampy lands, with the result that in many districts native ponies have almost entirely disappeared. When driven to the hills a few animals would die, evidently infected in the lowlands, but cases did not originate, and the disease gradually died out, mountain streams and upland grass in the nature of things not harboring the parasite.

Native veterinarians do not regard this disease as necessarily fatal; in fact, they claim to be able to cure it in many cases, but it is a fact within the knowledge of the board that they have always failed to do so in a determined case. The knowledge of this disease which is generally claimed by them is not consistent with the theory of its recent introduction into the Islands. They seem to be able to relieve an animal temporarily, and in several cases have returned it as cured; but a relapse invariably occurred in a few days, and the disease followed the usual course. So far as is known, no permanent benefit has ever been derived from treatment by native veterinarians. Being ignorant of the true nature of the disease, and having no means of determining it absolutely, it is evident that if any cures have been effected, the disease has not been surra. They are very secretive as to their treatment, and will not undertake to cure any animal unless it is turned over to them and taken away. What means of drugs they employ, if any, is so far unknown.

As this disease was unknown in the United States, and as our American text-books touched on it very lightly, if at all, our veterinarians and army officers generally on arrival in the Philippines, were wholly ignorant of it, and excusably so. It is not, therefore, surprising that it was not recognized when it first appeared, and that many American animals died before anything definite was learned. It is surprising, however, that it should have been so generally diagnosed as glanders; for such a gross error as this there seems to be no reasonable excuse on the part of veterinarians; but it is undoubtedly true that a great majority of the earlier cases were falsely diagnosed, and animals destroyed without knowledge of the real disease being increased one particle. As surra is invariably fatal, this error in judgment was not expensive,

as far as animals actually suffering from it were concerned; but the dread which glanders inspires in the minds of most veterinarians and officers led to further false diagnoses in the cases of animals suffering from lymphangitis, influenza, catarrhal troubles, etc., all tractable diseases; but the animals were ruthlessly destroyed; ignorance and fear of responsibility cost the government many animals. It is also true that some veterinarians did not make this mistake, notably Dr. Faust, but regarded surra as an entirely new disease, and endeavored in various ways to treat it specifically, but without success. As is usual in such cases, it has been announced from time to time that a given treatment has proved successful; every treatment, however improbable or absurd on its face, has been given a fair trial at the quartermaster's corrals in Manila without success.

The first mortality amongst our quartermaster's animals that attracted and received special attention, occurred in and around Manila during and following the rainy season of 1901; native animals were also dying in this part of the island of Luzon in great numbers, and had been for many months previously. The fact that the disease was probably due to the presence of a specific parasite in the blood was made known in October, 1901, but the parasite, though determined, was not recognized, and was generally considered to be entirely new.

Dr. J. G. Slee, assistant veterinarian, board of health; Dr. J. J. Kinyoun, surgeon U. S. marine hospital service, and Captain Allen M. Smith, assistant surgeon, U. S. A., were all identified with the discovery of the parasite, but it is difficult to assign the credit to any particular one. It is understood that the identification of the parasite was the result of a pure accident. The army medical officer in turning over the pages of a work on bacteriology, wherein the disease was described, found the parasite illustrated. The parasite having been discovered and identified, the attention of all turned to the treatment in the hope of finding some means of destroying it. It may be said in brief, that most of the germicides have been employed subcutaneously, intravenously and through the mouth without success Sub-

cutaneous treatment was almost immediately abandoned, because the powerful drugs employed almost invariably caused serious local ulcers.

Whatever doubt may exist in the minds of some as to the origin of surra, it has been universally recognized as a wet weather disease; it disappears almost entirely in the dry season here and elsewhere, only sporadic cases occurring, undoubtedly transmitted from case to case by inoculation through the agency of flies or other biting insects. Such insects are doubtless responsible for many cases, more than was at first supposed. It is recognized that they are much more numerous in wet weather, but they are never wanting, even in the driest season, in sufficient numbers to perpetuate the disease in any stable or locality, once it appeared there; whereas it disappears entirely in many stables and localities during the dry season, which fact clearly points to some other source of infection.

The fly theory is founded upon successful experiments and can be accepted as proved. It accounts for the spread of the disease after once introduced, but as it everywhere disappears almost entirely during the dry season, it is difficult to understand how it is kept alive from season to season, especially as it has been found impossible to detect parasites in flies that have been kept from surra cases twenty-four hours or over. In this connection it has been suggested that wild animals may have the disease in a chronic form, like cattle, and not dying, may perpetuate it from season to season. The idea is plausible, but information as to the existence of surra in wild animals is almost entirely wanting, and admitting that they carry the parasite, will scarcely account for the serious outbreaks that have occurred here and elsewhere, as contact is essential to the spread of disease by inoculation. With cattle, the case is quite different; their blood may swarm with parasites, but they rarely die, and may harbor them for months or years, and thus bridge over the interval from one wet season to the next, or much longer intervals. Contact with other domestic animals is also assured, and fleas or biting insects may do the rest. This is a most important fact, and should receive special attention in

the Philippines. The presence of parasites in the blood of the cattle can be readily detected by microscopical examination, and infected cattle are a great source of danger to animals in which the disease is fatal.

Surra is unquestionably due to the presence of the *trypanosoma evansi* in the blood, but it is admitted that there is some difference of opinion as to how the parasite gets there, and where it comes from. It must have an origin, and there is overwhelming proof that its recurrence is always during or following a wet season, and in localities subjected to overflow or containing marsh lands; and, what is equally important, that it disappears when these conditions no longer exist, either naturally, as in the dry season, or from improved drainage and proper precautions in regard to food and water. It is therefore impossible to ignore such important facts or to avoid the conviction that conditions under which the disease invariably recurs are responsible for its existence. The parasite cannot exist except in wet or damp places, and it is quite certain that when in the dry season the surface water disappears by evaporation, many of them die, and others in some form, follow the moisture below the surface and disappear from grass entirely. They are thus dormant until a recurrence of the moist conditions (rainy season) brings them to the surface; and both water and grass growing in it may convey the disease to any susceptible animal consuming them.

That the disease is spread by inoculation through the agency of flies and biting insects, and probably fleas and lice from rats which are frequently found infected, is no longer disputed. In fact, this agency is credited to-day with many more cases than formerly. Diseased blood is carried mechanically on the proboscis or feet and legs of flies, and is usually introduced into an animal through an abrasion or open wound of some kind, but it is extremely probable that the boring apparatus of the fly, as it punctures the skin, carries infection with it. Flies congregate in great numbers on animals suffering from surra, and apparently suck up blood faster than they can consume it, and an animal of light color

will appear covered with small spots of blood and flies standing in them; their feet and legs thus become covered with diseased blood, and, if they alight upon the abraded surface of a well animal before the blood has had time to coagulate and destroy the parasite, it will undoubtedly pass into the blood of the animal, and surra will result in a few days. To avoid infection from this source it is absolutely necessary to protect animals from flies. The sick being usually fewer in number, it will be simpler to prevent flies from biting them, and this will usually be sufficient when only a few cases exist, provided prompt measures are taken to isolate all suspects; otherwise protection should be provided for all.

Cleanliness is a great measure of precaution, and should be rigidly enforced; the stables and grounds in the vicinity should be thoroughly drained, and no stagnant water should be accessible to stock. It is during the latent period that danger is greatest, because unrecognized, and frequent tests as to temperature and condition of blood should be made, that animals in that stage of the disease may not be left in contact with the well; determined cases should be destroyed at once.

Rats are quite susceptible to the disease, and when it is around generally contract it. Animals inoculated with the blood of such have contracted the disease in a virulent form and died in from two to seven days, with frequently a long period of incubation. This fact led to experiments with excreta of rats, in whose blood the parasite had been determined, as to whether if mixed with grain it would produce the disease. It has also been claimed that the disease has been produced by rat fleas. As sources of infection, the above seem rather remote, but accepting Dr. Lingard's experiments as conclusive of the fact, it becomes necessary to protect all forage from the ravages of rats, and, primarily, the destruction of the rats themselves would remove all danger.

Working upon the theory that the disease was communicated by water and grass, the government of India has succeeded in exterminating the disease entirely from India, Burma and the Straits Settlements. Green forage is seldom

fed to animals, and never unless it is grown upon thoroughly drained land and under military supervision. Everywhere great piles of dried grass or hay were found stacked, as the generally expressed opinion was that the disappearance of surra was mainly due to its use. Government farms exist in various parts of the country, and mounted organizations marching from point to point seldom rely upon grass cut on the road. It may be stated that finally Lingard, Evans and other experts hold to the above theory, and in view of the result obtained there and our unqualified success in the Philippines, we could not do better than accept it and fight the disease on similar lines. The opinion, even of experts, unbacked by results, would prove very little. We must have results following the application of any theory to make it tenable. As stated, the theory has generally prevailed in India and Burma that water and grass are the original sources of infection, flies being regarded as spreaders, but not originators of the disease, and efforts based entirely upon this theory have resulted in the extermination of the disease so far as military animals are concerned, and cases are very rare amongst private stock.

In a new country with a new disease, it is perhaps natural that there should be much diversity of opinion, both as to its origin and its spread, but it is to be regretted that very marked differences of opinion exist here. We cannot afford to reject the experiences of our neighbors, extending over many years and resulting in the practical extermination of the disease, and accept and act on conclusions founded upon finely drawn theories, incomplete data and experience. It is useless to combat the disease on the theory that it is originally contracted through eating swampland grass or drinking impure, stagnant water, and ignore the great probability, in fact, absolute certainty, of inoculation by biting insects. The converse of the proposition is equally true. All possible means of infection have got to be taken into consideration, and a uniform and comprehensive system of fighting this disease adopted by both civil and military departments involving both public and private stock, or we shall have it with us always. Differences of latitude and altitude have

been found to exert very little influence upon the contraction of the disease, if the topographical and climatic features are favorable, and none at all upon determined cases so far as the result was concerned. But cases have not been known to originate at an elevation of 7,500 feet and higher, yet even this elevation has no effect upon determined cases, but does influence the progress of the disease, in that parasites are fewer in numbers and paroxysmal periods more continuous. This important fact was communicated by Dr. Lingard, founded upon his most recent investigations.

Surra has been defined as a specific and continuous infectious, febrile disease occurring in solipeds (solid hoofed animals) and camels, and capable of being transmitted by inoculation to other animals. It is due to the presence of a specific flagellate parasite in the blood. The fever is caused by irritation due to the presence of these organisms. The fever is of an intermittent, remittent and sometimes relapsing type, and continuous for varying periods from a few days to months, depending upon the animal attacked, its physical condition at the time, and the treatment it receives from the earliest indications. Animals which are worked after fever sets in, fail very rapidly and pass almost immediately to the final stages of the disease, many of the intermediate symptoms being entirely absent. Surra is found especially in horses, asses and mules, but is not confined to these species. Outbreaks have occurred among camels and elephants in India; cats and dogs are also commonly affected, the latter in the Philippines contracting the disease by licking the blood of animals that have been shot. It has also been transmitted by inoculation to cattle, buffaloes, sheep, goats, rabbits, guinea pigs, rats and monkeys. In camels, the disease generally assumes a very chronic type and lasts for months and even years. It is a fact that a camel which survives three years very frequently recovers.

The blood of cattle may swarm with it without apparent harm, and they do not die. The parasite was generally found in the blood of carabaos in Southern Luzon at a time when they were dying in great numbers, supposedly of rhinderpest. In no case was the parasite present in great

numbers, and it is not believed that it is always fatal; but that they do die of it, has, it is believed, been fully proved in Manila and elsewhere. Sex plays no part in regard to susceptibility, as both horses and mares are affected; age very little, and breed none at all, except that in India it has been found that Australian animals are much more subject to the disease than Asiatics. This fact deserves great consideration in the Philippines, in view of the considerable number of such animals now there and annually imported from Australia, and the fact that the period of incubation, under certain circumstances, greatly exceeds the duration of a voyage from Australia. Highly bred and high strung animals yield more rapidly to the disease than common stock and those with a phlegmatic temperament.

Our experiences in the Philippines show that horses and mules are alike susceptible, but it is probable that color has nothing to do with it further than regards its attraction for flies. Observation has shown that a white animal amongst a lot of dark colored ones infected, will receive much the greater share of attention. The limits of infectivity of surra are not yet determined, hence all mammals must, for the present, be regarded as possible carriers of the disease until negative experiments prove them to be refractory. There is no such thing as immunity by becoming acclimated or otherwise. G. H. Evans states most emphatically "that the popular idea regarding immunity of the indigenous ponies in Burma is a fallacy, as they all die equally with other breeds, as also did the Panthe mules which are bred in the northern and Chinese Shan States; so much so is this the case that hardly a mule or pony escapes in the upper Irrawaddi and other districts; so that all hope in the direction of naturally acquired immunity in breeds is lost." Experience in the Philippines fully corroborates the above opinion. Native stock is even more susceptible than American animals, owing doubtless to impaired vitality due to insufficient and no nutritious foods and hard work added to general neglect.

Dr. Lingard informed the board that the parasite had not yet been found upon grass cut from swampy and overflowed lands, but had been found in the stagnant water re-

maining after a high water period. As far as known the parasite has not been determined in either, in the Philippines, but investigations in this direction have been very limited. Both water and grass may, and probably do, harbor the parasite in its immature form which, as has been stated, cannot be detected by microscope. Impure water is therefore a more dangerous source of infection than grass; both will have to be avoided if a recurrence of the disease is to be prevented.

The symptoms are very numerous, but very marked, and with experience we should be able to diagnose the disease by the symptoms alone. It is a fact, however, that the two absolutely certain ways of diagnosing the disease are the determination of the parasite in the blood by means of the microscope, and the reproduction of the disease in other susceptible animals by inoculation; in the absence of a microscope the latter plan should be resorted to. The symptoms vary with a great many circumstances; first, as to method of contraction, whether naturally or by inoculation. When acquired in the ordinary way the onset of surra is that common to all low forms. Lingard gives the most complete summary which has yet been published, and, as it cannot be well improved on, it is in general followed, in so far as it is applicable to this disease as it has developed here. For complete analysis, see Lingard's own report, 1893, or as reproduced in "emergency report on surra."

The first stage of the disease is not usually marked by symptoms of a serious character. The skin feels hot; there is more or less fever; the appetite may be capricious, and the animal appears dull, and stumbles during action; but for several days there is nothing to indicate serious illness.

A most difficult point to clear up, and one which up to the present time has not been recorded, is the latent period of surra in cases in which it is contracted naturally; that is, the time which elapses between the introduction of the cause into the system and the first appearance of the parasite in the blood of the general circulation. This difficulty can be more readily understood when it is recognized that the forage or water or both are, in all probability, the source of in-

fection, that it is generally impossible to fix the inferior limit of time, and that when the symptoms of the disease become apparent the animal may be in an entirely different part of the country. This matter of incubation period is of great importance with reference to the time that suspects should be isolated, especially animals that have been in contact with the disease.

A symptom which usually appears early in the disease, and is of great importance in that it may be the first indication of indisposition, is the appearance of a general or localized urticarial eruption resembling nettle-rash or hives. These may be the only symptoms noticeable until the parasite is determined. The blood will appear normal, and under the ordinary treatment for fever the animal frequently improves in health and spirits. This condition lasts for only a few days, and with the first appearances of the parasite the animal is again dull and dejected in appearance, and well marked symptoms appear. If the blood be examined microscopically, a few small but rapidly moving organisms will readily be seen, giving to the blood as they pass among the corpuscles a peculiar vibrating movement, which once observed will not easily be forgotten. At this second stage of the disease the skin is very hot, with marked rise in temperature,  $101^{\circ}$  to  $104^{\circ}$  and over, 56 to 64 beats per minute; the visible mucous membranes may appear clean, but the conjunctival membranes, especially those covering the *membrana nictitans* (third eye-lid) usually show dark red or claret-colored patches, of varying sizes in different animals. This symptom is especially characteristic of surra, though found in other animal diseases. There is more or less thirst, and possibly a slight loss of appetite, or rather discrimination as to food consumed; but this symptom is not common in the Philippines, an appetite which may be called "ravenous" existing from almost the beginning of the disease to the end, even during the high fever periods; a quite unusual condition, but peculiar to surra.

There are slight catarrhal symptoms present, including lachrymation (very common), and a little mucous discharge from the nostrils. At this period of the disease, in a consid-

erable number of cases, the submaxillary glands will be found swollen and sensitive to touch, but not closely resembling the same symptom in glanders. It is the swelling of the glands and the mucous discharge from the nose that has led to the diagnosis "glanders." While this disease closely resembles malaria in the human subject, Dr. Lingard remarks that one symptom is markedly absent—any signs of chilliness. This is equally true of cases here. At an early stage of the disease it will be noted that there is some swelling and edema of the extremities, generally between the fetlock and the hock, with a tendency to involve the entire leg, which pits when pressed with the finger, but does not appear especially sensitive; also in males some swelling of the sheath. There is one symptom which can be said to be universally present from the determination of the parasite to the end, viz.: the rapidity with which all animals lose flesh, especially about the loins. From first to last there is progressive anemia, with more or less ulceration externally from this cause. Dr. Lingard says that anemic ulcers are not frequent in cases in India, but in the Philippines they generally appear at some stage of the disease.

If the blood be examined microscopically daily, it will be seen that the parasites gradually increase in number until they are literally swarming, the period varying from one to five or six days, in which condition they may remain one or more days, when they gradually or suddenly disappear entirely. With the disappearance of the parasite, the temperature lessens until normal, or even subnormal, is reached. If the parasites disappear suddenly, the temperature drops in the same way from  $104^{\circ}$  or  $105^{\circ}$  at night to nearly normal the next morning. It will thus be seen that the disease is characterized by periods of paroxysm, when parasites are always present, accompanied by fever in proportion to the number and periods of apyrexia or intermission, in which there is neither fever nor parasites, also of varying length. It may be stated as a law, that the amount of fever varies directly with the number of parasites present. During fever the temperature rarely falls to  $102^{\circ}$  Fahrenheit, but is generally  $103^{\circ}$  or over. In but a single instance within the knowledge

of the board have parasites been found in the blood with a subnormal temperature; this was the case of a mule at Camp Vicars, in the pink of condition as far as external symptoms went, but showing a very few parasites in the blood in the morning examination for four or five days, with temperature of 98° or very slightly over, the evening temperature always being four to four and one-half degrees higher. The case bears out Dr. Lingard's explanation in regard to cases in the hill country of India, Camp Vicars being at about 3,000 feet elevation and having a cool climate.

During the intermission periods an animal frequently improves in appearance, and external symptoms are more or less modified; and, but for loss of flesh and edema of the extremities, there is little to show that it is seriously affected. With each recurrence of fever and parasites, all symptoms grow worse and worse; the animal becomes more and more dull and dejected, until its nose is almost on the ground, and it makes no effort to remove tormenting flies which swarm on it; in fact, muscular power over the skin seems lost. The visible mucous membranes become yellow, and dark spots appear on the conjunctival membranes; the action of the heart is irritable and at times irregular; the breathing is quickened and irregular, being more abdominal than thoracic in character; and in noting an animal at this stage, it will be seen that it makes seven or eight short respirations, which are followed by a more prolonged or sonorous one. The swelling and edema increase, and serum sacks under the belly, often of very large size, are formed, extending from the sheath to the forelegs; the swelling of the sheath is greatly increased; it is enormous in size and nearly trailing on the ground; the penis is much swollen, and there is a constant tendency to erection, and what is called "horsing" in mares. The periods of alternating paroxysm and intermission may go on for some time; the progress of the disease is variable and greatly depends upon the condition of the animal attacked, the weak ones failing very rapidly; but each return of fever increases the severity of the symptoms. During the progress of the disease the wasting away is con-

tinous, until the animal is literally nothing but skin and bones.

In the Philippines, a more or less tendency to constipation has been noted in the early stages of the disease. Diarrhoea is not common at any stage, but is extremely offensive when it does occur. Towards the termination of every case the animal shows great disinclination to move; there is a manifest loss of power over the hind quarters, which reel from side to side if the animal is forced to move, accompanied by a dragging of the hind feet, somewhat resembling paralysis. There is also frequently present paralysis of the *spincter ani*, and a dilated condition of the anus. Numerous post-mortem examinations show that up to the end of the disease animals seem to digest their food very well, but there is also a partial paralysis of the lower bowel and rectum for some ten or twelve inches, as they are unable to eject their excreta; it gets stalled at a point eight or ten inches from the anus, and muscular efforts to dislodge it cause secretion of considerable mucous.

Dr. Lingard says that the above symptoms, taken together, point to some interference with the normal functions of the spinal cord in the lower dorsal and lumbar regions, and are probably due to pressure caused by an exudation within the spinal membranes. However caused, they were amongst the most pronounced symptoms. In many cases, shortly before death, the action of the heart becomes so violent, that it shakes the body and can be heard at some little distance. Death occurs in several ways: The animal may drop dead from a standing position, or may drop and die after a short struggle; or, being down from weakness, death may occur after a series of struggles, in which the animal apparently suffers intense pain, and may sweat profusely.

It must not be expected that all animals will exhibit the symptoms given above or run closely approximately thereto. As near as can be determined, they represent a normal case, departure therefrom being due to the varying conditions of individual cases. Some of the visible symptoms will certainly be present, and the microscope will settle the matter beyond dispute. Fever will always be present, and surra

having appeared, a temperature of 101° or over without assignable cause, must be regarded as suspicious. As a safeguard, the temperature of all animals should be taken daily, preferably towards night, and all suspects should be promptly isolated. As has been stated, the onset of the disease is so insidious that the animals may show no pronounced symptoms until the appearance of the parasite, and much time may be lost, during which the contagion may be communicated to other animals.

In the case of animals contracting surra by inoculation, an opportunity is afforded for studying the progress of the disease, and data are necessarily more exact, but the conditions vary so much in different animals and depend so much upon the way in which the disease was communicated, that no general law can be enunciated. The results of an elaborate series of investigations in which surra has been reproduced are given in "emergency report" previously referred to; no such exhaustive study has yet been made by the military establishment in the Philippines, but there is no reason to believe that the disease so induced would take any different course here.

Blood, serum and body fluids have been used for inoculation intravenously, subcutaneously and through the mouth, and by smearing an abraded surface, all taken from surra cases before and after death, and the disease has been reproduced in every case. If taken anti-mortem and during a paroxysm the number of parasites in the blood is important, as, when very numerous, the disease is reproduced in much less time than if taken during an intermission or apyriaxial period, when parasites cannot be demonstrated in the blood. The disease has also been introduced by infected blood administered in drinking water, but this method has frequently failed, and it is not believed that surra will result, unless the animal has a cut or abrasion of some kind through which the parasite comes in direct contact with the blood. This is doubtless true with regard to water and grass as original sources of infection, and will account for some animals contracting the disease and more escaping, where all are watered and fed in the same way.

It may be as well to state here, that blood from a determined surra case, even though the most searching microscopical examination does not reveal a single parasite, will always reproduce the disease, a fact which seems conclusive as to the existence of the parasite of surra in some other than the matured form in which it is always seen; in fact, it is now generally believed that it does exist in an immature form, not visible under the microscope, and hence indeterminate and so far intractable. If taken post-mortem, the number of hours after death, the quantity of blood or fluid introduced, and the method of inoculation, all influence the result.

A single illustration of the result of subcutaneous inoculation of a small quantity of surra blood as given by Dr. Lingard will suffice. Twenty-four hours after inoculation a small and somewhat raised swelling is noticed at seat of inoculation; after forty-eight hours, the tumor has increased in size, with edema and tension of parts involved, and is generally tender on manipulation. The fourth day the tumor may measure three inches or four inches by two inches or three inches, one inch to one and one-half inches high, and is quite movable. These symptoms will vary under the conditions noted above, until from the fourth to the thirteenth day the tumor will be found to have lost a certain amount of its tension and tenderness; after this, the swelling and edema will gradually grow less, and from the tenth to the fourteenth day there will be nothing left but a slight thickening of the skin over the point of injection; but at the moment when tenderness and tension suddenly decrease, a symptom of importance clinically takes place, viz.: at that moment the organism of surra enters the blood of the general circulation. Up to this time the disease has been completely localized and the ordinary operation for tumor will remove it. Fever may supervene on the day of inoculation, or not for several days; the indications may be very slight, or there may be a considerable rise lasting two to six days; but at the time the parasites enter the blood there is always a decided rise,  $103^{\circ}$  and over, accompanied by all the syn-

toms noted in cases contracted naturally, and from this point the progress of the disease is practically the same.

In summing up, Dr. Lingard says:

"The fever of surra varies to such an extent in different cases, that it is impossible to group them under one system of description as regards the stages of the disease. The insidious nature of the onset in naturally contracted cases devoid of symptoms during a considerable period, renders it impossible to recognize it, until such time as the organism enters the blood. Consequently little is known concerning the latent period and stage of invasion, and in such cases, when untreated, the form is of a continued type, with more or less intermissions at long, but irregular intervals, ten or more days. If, in untreated cases, the paroxysmal periods were regular the life of the parasite would be known, as the termination of this period announces the destruction or disappearance of the matured form; but the number of such paroxysms an animal will survive and their duration, vary with each case."

Young horses in good condition may pass through nine or ten paroxysms, and cases have been known to linger along for as much as a year, while in some cases, notably old and worn-out animals and those that have been overworked or subjected to unusual exposure, the course is very rapid, and may be one or two weeks or less. In India, average duration for different outbreaks is variously given as forty-three days, not less than two months, one month or more, and fifty-two days. In the first volume of Lingard's report a précis of numerous cases acquired naturally and artificially produced is given, containing much useful information and showing the variations in individual cases.

#### TREATMENT.

It is obviously imperative that the existence of the disease be detected at the earliest moment possible, and the animal put under treatment at once, the rapid destruction of the parasite being the point of greatest importance. Most animals fail so rapidly after the appearance of the parasite that a single day will make all the difference in the world, and unless the animal is in good condition as to flesh and

strength, it is perfectly useless to attempt treatment. On account of the deadly nature of the disease, treatment should only be attempted under the most favorable conditions; that is, when the animal can be completely isolated and protected from the weather, flies, etc., and fed all it will eat; under the usual conditions of service animals should be destroyed at once. In brief, then, treatment has so far failed. Lingard has experimented with the following drugs, with the results given:

*Mercuris chloride* has been employed subcutaneously, and also by direct injection into the circulation, with negative results.

*Iodine and iodide of potassium* by intertracheal injection, and also by subcutaneous inoculation, followed by negative results.

*Iodoform* by subcutaneous injection, and also by direct injection into the jugular, produced no good results.

*Oleum terebinthinae* by subcutaneous injection, and by injection into the jugular, was followed by negative results.

*Potassi bichromas*, direct injection into the circulation and by gastric ingestion, produced no marked effect on the infusorian.

*Mixed cinchona allalooids and arsenic* did not destroy the infusorian.

*Carbolic acid and iodine*, 76 drams of the former and 34½ drams of the latter in six days, produced no apparent effect on the infusorian.

*Quinine* in large doses had no effect on the infusorian.

*Iodic hydrarg*, a very powerful antiseptic, had no effect.

*Santonin* had no effect.

*Potass* had no effect.

In the Philippines pretty much all the foregoing have been used with negative results. Also powerful salt solution, formaldehyde gas, sulphur, etc. Bichloride of mercury injected either in the muscular tissues or intravenously arrests the disease in every case and destroys the parasite; the animal almost invariably improves in appearance, and for a few days is apparently better; but the use of this drug cannot be persisted in, as symptoms of mercurial poisoning ap-

pear, and it destroys the red blood cells about as fast as the parasites reappear, and the animal fails very rapidly. The only drug that so far promises any return is arsenic, and three cures in India were effected by the administration of arsenic and iodide of arsenic and mercury. The only case believed to have been cured in the Philippines was effected by the administration of Fowler's solution of arsenic intravenously, and tonics of iron, quinine, etc.

As early as January, 1902, the board investigating surra in the Philippines reported that arsenic administered intravenously destroyed parasites in nearly every case, and that animals so treated were doing well. Treatment not conclusive as to cure. More extended inquiries showed later that the improvement was only temporary, and that animals invariably died after a period, depending upon their ability to stand the arsenic treatment, with the single exception of the mare mule noted above.

The following treatment is the only one known which gives the least promise of a successful issue: Arsenic in the form of Fowler's solution, the maximum dose depending upon weight and condition of animal treated. Commence with five grains, given twice daily for forty-eight hours, the quantity being increased by half a grain after every four doses have been administered, until seven grains are reached. The latter amount should be continued twice daily for seven days for animals under 800 pounds in weight; for animals of 1000 pounds or over, the dose may be increased by the addition of half a grain up to nine or even ten grains twice daily for the same period. The dose should then be gradually reduced by half a grain to one grain, according to condition of patient until a five-grain dose is reached. If the condition of the animal permits, repeat the treatment after a period of two days, increasing and then decreasing the dose of arsenic as above described. But the fact must never be lost sight of, that if the arsenic be administered to an animal for a prolonged period, symptoms of gastric irritation will sooner or later appear, and there is always danger of cases suddenly developing symptoms of chronic arsenical poisoning. These are usually effected by partial loss of muscular power with

great unsteadiness and nervous tremors, and usually prove fatal in forty-eight hours, even though the use of the drug is discontinued at once. Acute nephritis is a common complication of surra, but it must not contra-indicate the administration of arsenic, although the maximum doses cannot be maintained, otherwise the animal will relapse and die. Daily microscopical examinations of the blood should be made, and the number of organisms recorded on a chart for ready reference, as "none," "few," "numerous," "swarming," together with the temperature, pulse and respirations of the patient, which should be taken three times daily, say at 8 A. M., 1 and 5 P. M.

Most animals will take the drug in water without trouble; excessive thirst is usual and if the water is withheld for some time they will drink it freely. If refused, it can be mixed with the feed, and in very obstinate cases, administered in the form of a bolus or draught. The compound tincture of lavender is sometimes added to the solution to make it more palatable.

After the parasites have disappeared from the blood for several days, the animal should be gently exercised, short distances at first and gradually increased to one mile, provided no unfavorable symptoms recur. If the temperature rises, all exercise must be stopped, and should never be allowed as long as parasites are demonstrated in the blood. If the case progresses favorably, the edema of the lower extremities, sheath and under surface of the abdomen should disappear gradually under the influence of the arsenic and exercise; this may be accelerated by daily massage of the body and limbs. The above treatment advocated by Dr. Lingard is the only one known that offers any prospects of success, even under the most favorable circumstances, and only in cases of animals able to stand the prolonged treatment with arsenic. It took months to cure the few cases known to have survived.

After twenty years' experience with the disease in India and Burma, notwithstanding the vast amount of investigation, study and experiment devoted to it, no treatment worthy of the name of cure has yet been discovered; the same

want of success has attended, so far, all efforts in the Philippines.

It has been suggested that the administration of arsenic to all animals as a measure of precaution at the commencement of the rainy season, especially to those likely to be exposed to infection, is worthy of attention and trial. This idea is founded upon common sense, as arsenic certainly destroys the matured form of the parasite, and there seems good reason to believe that an animal would be more refractory by its use as a prophylactic measure.

Post-mortem examination does not show any structural disease. Structural changes are not found in the kidneys, liver, spleen, heart, lungs or mucous membranes of the stomach and intestines. According to Dr. Lingard there is no specific lesion present. Organs and tissues are in the anemic condition, and abscesses are usually found in the stomach and abdominal cavity. Evans is of the opinion that in all cases of death from chronic surra, or in animals that have been destroyed after the disease has lasted some time, ulceration of the stomach, more or less extensive, will be seen post-mortem. The pericardial sack and pleural cavity are generally full of serous fluid, but inflammation is not present; ante-mortem clots are found in the heart.

#### LETHALITY OF SURRA.

All authorities are now afraid that surra is invariably fatal. Untreated cases are hopeless and all treatments have, so far, failed. But three cases are known to have recovered under treatment in India, and possibly one in the Philippines. It is a peculiarity of this disease, that a cure does not result from the destruction of the natural form of the parasite in the blood, and it invariably reappears after a variable interval, with fever and all concomitant symptoms. This fact points to the existence of the parasite in some other than the matured form shown by microscopic examination, which is not destroyed by the germicide, and remains in the system after the disappearance of the latter. The matured form can be destroyed in several ways, but beyond this point absolutely no progress has been made in the treat-

ment of the disease. Of the immature or "resting" form, so called by Dr. Lingard, but very little is known, and, so far, it has been found impossible to combat or destroy it; until this is reached it is obvious that the disease is necessarily fatal. The reason of the disappearance of the parasite from the circulation even in untreated cases at irregular intervals, has been earnestly sought for; during the intermission periods the most searching examinations of the blood reveals nothing until the matured form reappears. The parasite multiplies by division, sometimes longitudinally and sometimes radially during the paroxysmal periods, until the blood is literally swarming with them, and then they suddenly disappear. From the similarity of the disease to malaria, the theory that the parasite itself secretes a toxin which finally destroys it has been accepted by many.

Dr. Lingard stated to the board, that it was his belief, formed on his most recent investigations, that the parasite secretes a toxin during the paroxysms which increases with the number of parasites until it ultimately destroys them, and then passes off through the urine. Discoloration of the urine during the intermissions has been noticeable, and dead parasites have been determined during the time the toxin is present in the blood and passing off. During this time the resting form of the parasite retires to the bone marrow, spleen, or organs, and remains until the toxin has disappeared; it then returns to the circulation, becomes active, matures very rapidly and commences at once to multiply. Dr. Lingard has noted subdivision going on within a few hours after its reappearance. Hence, recovery unaided is impossible, and by no treatment yet devised have investigators been able to reach the resting form.

#### PREVENTION.

As we cannot cure surra, our greatest efforts should be devoted to prevention, both as to contraction and spread of the disease. Until experience has determined the districts and localities through the islands in which the disease is endemic, this will be most difficult. Hence the absolute necessity for acquiring this information as soon as possible.

So far as such districts are concerned, there seems to be no remedy save the one applied in India and Burma, and that is to avoid them entirely. We must also adopt their rule in regard to green forage, that is, feed none but that grown under competent supervision, or known not to be infected. If, as is believed, green forage under a stated condition is an original source of infection, all other measures of prevention are powerless to stamp out the disease, as long as we continue to feed it. It seems to be the part of wisdom to discontinue feeding uncured grass entirely, until we have acquired more complete knowledge as to which is harmful and which is not. As a matter of fact, the greater part of the grass supplied under contract is of such inferior quality and contains so little nutriment, that the small quantity now fed could be discontinued without detriment to the animals.

The same precautions must be taken in regard to water, and animals must not be given or allowed to drink impure or stagnant water; this is even a greater source of danger than the grass, and carelessness in regard to it will make all other precautions useless. All stagnant water in the vicinity of stables, corrals, etc., should be drained away. This simple precaution in India has, in several recorded cases, stopped the disease by removing the cause. Animals should not be grazed in localities where they can get at stagnant water, and on the march, or in the field, animals not under individual control, should be provided with muzzles. Contact with native stock should be prevented in every way possible, and where the military control the situation should be prohibited.

The application of some such system as that suggested above can alone control the situation so far as native stock is concerned. With the above precautions taken, there remain the measures necessary to prevent the spread of the disease when it appears in spite of them, as will doubtless be the case for some time to come. Prompt recognition of the disease and the immediate isolation or destruction of the animal, are the measures of first importance.

*Surra* having appeared in a stable or corral, all animals therein are under suspicion, and should be critically exam-

ined daily; temperature should be taken at least once daily, preferably in the afternoon, and any animal having fever  $101^{\circ}$  or over, without well defined cause, should be immediately removed, and no contact permitted with any other animals till the case determines. The blood of all animals with fever should be carefully examined daily, and, upon the appearance of the parasite in any case, it should be destroyed at once or removed to as great a distance as possible. Animals which do not develop surra should not be returned to duty until they have shown no fever or parasites for at least ten days. Animals arriving at any stable or corral, especially if coming from an infected district, should not be allowed to mix with stock on hand, till they have been held under examination a safe interval, say thirty days. The difference in detention periods suggested is due to the fact that the disease would in all probability spread by inoculation in the first case, when the incubation period is much shorter; while in the latter case, if surra appeared, it would be more than probable that the disease was contracted naturally, with a much longer incubation period. When surra prevails in any district, animals should not be moved round from station to station more than is absolutely necessary, and animals under suspicion of surra should not be moved at all. Experience in the Philippines has been particularly unfortunate in this respect, but now that the number of stations to be permanently occupied is practically fixed, the necessity for constant changes no longer exists, and data as to the infection or otherwise of any station can be acquired.

## THE FRENCH SCHOOL OF APPLICATION FOR CAVALRY AT SAUMUR.

— BY CAPTAIN FRANK PARKER, FIFTEENTH CAVALRY. —

HERE seems to be no question that the French School of Application for Cavalry, is the best equipped and best organized institution of its kind. A simple statement of the major details of this school from the standpoint of equitation will show the completeness of its equipment.

There are for instruction in equitation alone, twelve riding masters, or écuyers. These officers are without exception horsemen of repute, selected upon their records as such. There are in all fourteen hundred horses at the school; there are two hippodromes, and one cross-country terrain, all equipped with obstacles and tracks, for training and racing; there are four riding halls, with complete equipment.

I give these details to show the completeness of the organization and equipment of the department of equitation alone.

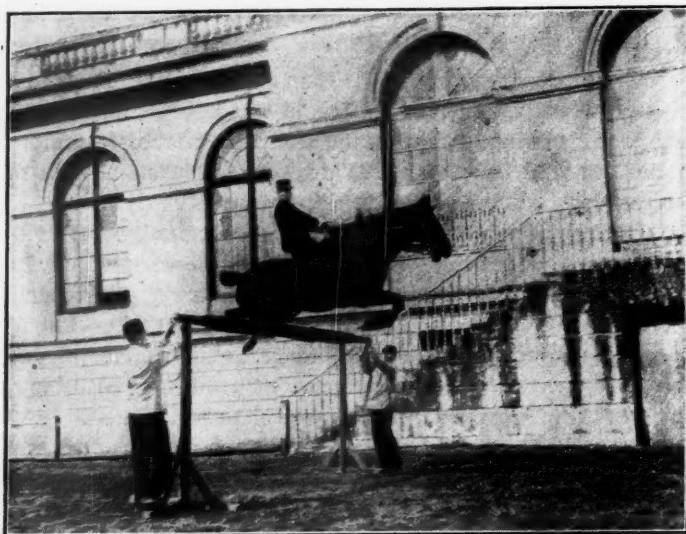
I shall commence with this department, as the horse is the subject of foremost interest at Saumur. Later I shall describe the other departments, none the less important, and all organized and conducted with a thoroughness that one sees in every detail of this admirable institution.

Captain Mott, in his article published in the January 1903 number of the CAVALRY JOURNAL, gives a most excellent general description of methods employed in the instruction of equitation at Saumur.

I shall, therefore, pass at once to a description of the system by which the high standard of rider and horse is maintained at Saumur. This excellence is due to the gentlemen of the "cadre noir," the "écuyers" or riding masters, cavalry officers detailed for five years in this work. I shall describe

the means by which, and the reasons for which an officer is appointed to this cadre, an appointment bearing with it a prestige of the highest order.

Let us take the case of the cavalry officer coming up from the ranks—the number of officers of this class equals approximately that of the cavalry class graduating from Saint Cyr, but they are not commissioned until after graduation



CAPTAIN DE HAATECLOQUE TAKING BAR.

from Saumur. This young man must have had at least *two* years as sergeant (this means at least four years of enlisted service in the French army), he must have been recommended by troop, regimental and brigade commanders, and *then* he must pass a competitive examination, and only two men are sent from each *brigade*. Therefore the chances are that he is an excellent man.

Once at Saumur, the year for these noncommissioned officers is not essentially different, as regards equitation, from that for second and first lieutenants; naturally, the theory is less advanced. By the end of the year, the riding masters

have had ample opportunity for remarking the qualities of each student, and in each class there will always be a half dozen or so who will be conspicuous as easy, graceful, fearless riders, good all-round horsemen, good in the manège, good on the buckers, good in steeple-chasing, and cross-country, good in horse training, good in hippology and general horse knowledge.

Granted that each man rides three hundred and fifty horses during the year, and horses of all kinds, ages and descriptions, in all sorts of work, his instructor, who watches him and notes him daily, has a very thorough idea of his capacity at the end of the year.

Next, to pass to graduate of Saint Cyr:

The system of equitation at Saint Cyr is exactly the same as at Saumur, only in a lesser state of excellence. However, in the short time that I spent at this school, one day only, I was struck with the admirable installation and arrangement of the department of equitation.

There are four fine riding halls, two large maneuver fields arranged for exterior carrière, and five hundred fine horses, thoroughbred, half-bred, Anglo-Arab, Tarbe, etc., all excellent.

The course at Saint Cyr lasts two years. During the first year infantry and cavalry ride together, and have only about one hundred and twenty hours of riding. At the end of this year the candidates for cavalry present themselves for competitive examination in practical horsemanship, and one hundred are chosen. At end of second year eighty approximately are commissioned as second lieutenants and sent to Saumur. During this second year the class has ridden about four hundred and eighty hours. Therefore on arriving at Saumur a second lieutenant has already had two years of equitation. From this point on to the end of the year, what I have said concerning the noncommissioned candidates applies to the second lieutenants.

Four or five years after graduating, one out of four of the second lieutenants, the proportion is one to each brigade, is sent back for an additional year, upon the recommendation of his colonel and brigade commander, and once again they

go through the same hard year's equitation with the additional work of kriegspiel, regulations, service in campaign, hygiene, German, etc.

Let us see how the ardent French cavalry lieutenant has passed the four or five years between his first and second course at Saumur.

France is a horseman's paradise. A mild climate the year around, a perfect system of roads and a beautiful coun-



LIEUTENANT MADAMET ON "COURAGEUX," THE THOROUGHBRED WITH WHICH  
HE WON THE BRUSSELS-OSTEND RACE, 1902.

try in every direction, forests with bridle paths, roads with wide margins of turf, and an agreeable ride in whatever direction one turns. Moreover, every town of France of any importance has its concours hippique each year, in which there are always one or more military prizes; also a series of races, in which one or more prizes are offered for the military. The railroads transport an officer's horse for a ridiculously low figure, and there is always a car on hand to take his horse to hunts, races and concours hippiques. Here I would say that in France all military racing is over obstacles. There is a prize offered each year at Paris for the best charger (*cheval d'armes*) etc., etc.

Now, therefore, a young and ambitious cavalry officer finds ample opportunities for continuing his equitation in several lines, and the officers who return to Saumur as first lieutenants for the second course, have usually ridden a great deal in races and concours hippiques, the records of all of which are carefully kept. Almost every class has three or four, or several, depending upon classes, men who have thus spent, by the time they finish their second course at Saumur, eight or nine years in close contact with every kind of horsemanship, and amidst the best horses and horsemen



LIEUTENANT DE LA BROSSE TAKING A WALL CAPPED WITH EARTH AND GRASS.'

in France. And it is from this category that the cadre noir is recruited; hence the standard of riding and horse.

I question whether there is a single écuyer to-day who cannot give you all the statistics concerning any horse of note in France, or one who is not familiar with all the race-courses of France.

I shall take for example our riding instructor, Captain Féline, at present captain in the Fourteenth Dragoons. Here is a gentleman who can deliver a lecture worth hearing by any audience on saddles, bridles, horse-shoeing, arrangement and care of stables, hippology, anything pertaining to the horse. He is alike at home upon the thoroughbred of the manège, in the delicate procedures of the haute école, as upon the difficult half-bred hunter in cross-country

or the training of an unbroken colt; in brief, the complete horseman. And this completeness arises from two sources, both of which are essential to the officer who is to be a good instructor of equitation. First, a natural love of the horse, and second, years spent in the practice and study of the theory of equitation and all that goes therewith, and this under masters as efficient as Captain Féline is to-day.

The riding masters not only teach practical equitation,



RIDING INSTRUCTOR TAKING A HIGH HEDGE.

but profess hippology and the theory of equitation, and, in addition, train three or four (never less than three) green horses each year. The experience that an écuyer has had when he completes, let us say, his first term as such, is something enormous. I have already called attention to the fact that a conservative calculation shows that each student rides three hundred and fifty different horses during his year at Saumur.

The roster of the riding instructors is as follows: One instructor in chief, rank of major; six instructors with rank of captain; five instructors with rank of lieutenant.

The appointments are made by the Minister of War from the list of those officers recommended by the superintendent of the school and the écuyer en chef.

The term of their service as riding master is five years. This is the regulation period for all detached service, and no officer is allowed to remain away from his regiment more than five consecutive years. An écuyer, however, may, and usually does, return one or more times, and the chief has heretofore always served previously as instructor.



NONCOMMISSIONED OFFICER OF THE CADRE NOIR TAKING "THE RIVER."

Their pay remains the same, except for the slight increase of six dollars per month allowed to all officers on duty at Saumur.

The écuyers are assisted by a noncommissioned body of one sergeant major, one first sergeant, and eight sergeants. Their duty consists in the training of young horses, of horses particularly difficult, in breaking the colts, and in training and riding the sauteurs. They likewise have general charge of the stables. These men come from the cavalry regiments, and are sent to Saumur because of marked ability as riders. They remain several months on probation, and, if judged capable, may remain indefinitely, so long as they give satisfaction.

But the work is exceedingly hard; they ride as many as twelve horses in a single day, and usually the most difficult,

and after fifteen years' service they usually request retirement. This they are entitled to, and this they certainly have deserved. These noncommissioned officers are a worthy addition to the cadre noir. Magnificent horsemen, spending their entire day in the saddle, and passing from one horse to another a dozen times a day, I question whether they have superiors in practical horsemanship. Nothing but pure love of the horse and equitation could cause a man to undertake and pursue continuously work of this kind, and this, combined with the necessary sturdy physique, makes of these men admirable horsemen.

The noncommissioned officers, however, do not teach riding; all of the instruction is given by the officers of the cadre noir. But they take part in the tri-weekly rides of the écuyers, riding the sauteurs, with the lieutenants of the cadre.

Captain Mott has given a most graphic description of the "Reprise des Écuyers." I shall therefore limit myself to a few of the details of this ride. The object of the "reprise" is to keep before the eyes of the school the practical exposition of the most important branches of equitation, as taught at the school.

The "reprise" opens with the officers of the cadre noir mounting the highly trained, selected thoroughbreds. The movements are all at the slow trot, and are intended to demonstrate the perfect obedience of the animals to the indication of the hand or leg; the suppleness and complete mastery of the animal over his own mechanism.

The exercises consist at first of figures of various kinds, movements along the diagonals, along spirals, keeping the axis of horse perpendicular to the curve, etc. Finally, the high-school, consisting principally of the Spanish step—interrupted walk in which the members are raised and extended well forward before being planted—and the passage or interrupted trot, in which the animal pauses between steps, raising the feet high in the air and marking a distinct pause. In this latter exercise the thoroughbreds have an indescribably graceful and dainty appearance; some of them execute these steps with remarkable address and brilliancy.

With the high-school terminates the work with the thoroughbreds, and the sauteurs are then brought in, mounted by the lieutenants and the "sous maitres," (noncommissioned officers of the cadre noir). The sauteurs are half-breds of the hunter type. The first movement is a rapid gallop round the hall, then a movement by the flank, a halt, and the horses at a signal rear to a vertical position; then down and away again; a few figures all at a rapid gait, and again they pause in the center of the hall, and at signal lash



CAPTAIN SAINT PHALLE RIDING A THOROUGHBRED AT THE SPANISH STEP.

out, elevating the hind quarters high in the air, then off again. A third pause, and the combination of rear and kick is effected. This results in a formidable buck, and these animals from constant practice, are able to make tremendous buck-jumps. This part of the schedule usually closes with each animal's making one or more buck-jumps in passing a certain point in the hall.

The shape of these sauteurs at once attracts attention. With very thick round barrels and great muscular development in all parts, they would appear, when not in motion, very clumsy, heavy animals; and yet, when once in motion, they are as quick and active as ponies. The peculiarity of

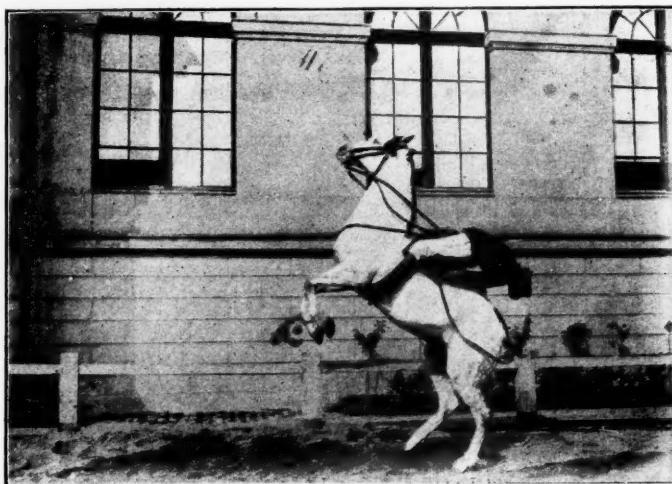
their shape arises from the constant exercise, in the "piliers" and outside, in the violent exercise of the "saut." They tell me that even a delicately built thoroughbred will thicken to such a form after a year or two in this work. There is a special saddle for the sauteurs which I will describe later.

The third and last part of the "reprise" is the work with the half-bred hunters over obstacles. In this work all officers of the cadre noir take part. Various obstacles are used from the simple bar to combinations of two hedges and a bar, two bars and a hedge, etc. The obstacle frequently goes above six feet in height and four or five in width. These hunters are usually the horses being trained by the riding masters.

The park saddle is used in this work. The entire ride is given in the riding hall. Once having seen these horsemen and horses, any fair minded American cavalry officer will admit that between French equitation, as demonstrated and taught at Saumur, and the equitation taught at West Point there can be no comparison. At Saumur he sees the careful development and evolution of a science, long since entrusted to scientific specialists; here he finds a system carefully thought out in the beginning, dating from the administration of the Count d'Aure (1736); since that time succeeding administrations have added their improvements successively.

Captain Saint Phalle of the cadre noir, and one of the most celebrated horsemen in France to-day, said to me: "This system that you see here to-day has not been inaugurated by this administration. It dates from the early part of the eighteenth century; we écuyers simply endeavor to add something to the fabric already carefully constructed, and based upon principles long since found to be correct." Captain Féline, likewise of the cadre noir, said to me: "The principles of equitation are to-day practically fixed. Any two or more men, having a proper knowledge of what they write when treating the subject, are bound to say more or less the same thing. Equitation is no longer in an experimental state."

There may be some argument as to the material advantage of the high-school and scientific equitation from the military standpoint. So I shall state here that the écuyers treat equitation in all its forms; their idea is that a cavalryman should be given the correct idea of what a horseman and a horse should be; a horseman from the various standpoints of horse-breaking, horse-training, steeple-chasing or cross-country, riding hall exercises, riding of difficult animals



SAUTEUR EN LIBERTÉ — REARING. RIDING MASTER.

and the high-school; a horse from the standpoints of charger, hunter and race horse, and from the standpoint of breeding.

Here I wish to say that only straight equitation is taught. By straight equitation I mean the work with the jumpers in the riding hall, hippodrome and cross-country; 2d. The training of a green horse, to the extent of having him understand the change of lead, to respond readily to hand and leg, and to jump freely; 3d. The riding of well trained thoroughbreds in the various simple movements of the riding hall; 4th. The sauteurs, horses trained to kick and buck; 5th. Some instruction in the training of horses for racing. Under this last heading I would say that there are about forty of the horses be-

longing to the school which are trained by selected members of the student classes for the spring races, which take place at or in the vicinity of Saumur. These horses are ridden in the races by the officers who train them.

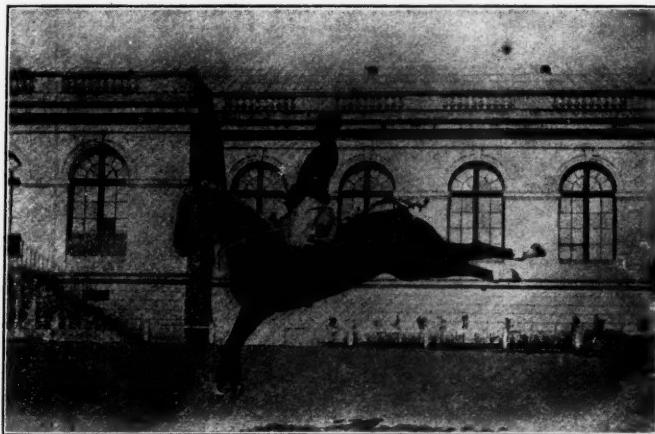
However, the more finished side of equitation, such as the high-school, is presented to the student in order that he may see the higher education of the horse and the proper way in which to go about such work. This system shows the science of equitation in its highest development and in all its branches. For those student officers who desire to specialize, it demonstrates the higher steps, and by force of practical example, gives to the young graduate a most accurate idea of the lines along which he is to work, if he aspires to be considered as an "homme de cheval," or to be an écuyer.

And let every American cavalry officer disabuse himself of any idea that he may have that military equitation in France is not strenuous. Let him take a "draw in the dark" amongst the principal half-breds for the weekly cross-country run at Verrie, with snaffle bit and no stirrups, and ten to one upon his return he will say that it was sufficiently exciting. Or let him mount (as do many of the écuyers and student officers) in steeple-chases and obstacle races, horses he has never seen until he mounts them to go to the post, and over courses that he has never raced on before. It will be of sufficient pace to prove my assertion. Let him go to Pau and follow a drag across that country; let him mount the sauteurs in liberty, or those powerful unbroken half-breds; there are many ways in which he could convince himself of the truth of my assertion.

Finally, the cadre noir consists of a dozen of the best riders that the French cavalry can produce—men who have spent their lives in practical equitation of the most varied description, from the training of difficult, unbroken half-breds to the high-school for the selected thoroughbreds; alike at home in cross-country or in riding hall, on steeple chase or race course, on broken or unbroken horses, knowing the theory of treatment for all possible cases, and the proper manner of putting it into practice, I shall ever believe these gentlemen to be

the best all-round horsemen of the world. There may be better, but I shall have to see them before I change my opinion.

The French government has seen the wisdom of encouraging specializing, and it is due to a continuous line of specialists in equitation that the cavalry school of Saumur owes its unquestionable superiority in this science. Hardly a member of the cadre noir but is famous as a horseman through-



SAUTEUR EN LIBERTÉ. RIDING MASTER.

out the French army; such names as De Montjou, Féline, Saint Phalle, Madamet, De La Brosse, are famous beyond the limits of France, and as long as men of this calibre direct the department of equitation, the prestige of Saumur will not diminish.

There is but one way to produce such horsemen, and that is by the establishment of a system of equitation equally as well devised as that of Saumur and Saint Cyr. In view of the general efforts now making in many directions to improve our military service, our cavalry service may well turn its attention to a careful consideration of the French methods of instruction in equitation.

While at Saumur, and with the Fifteenth Chasseurs at

Chalons, I have been struck with the fact that colonels, majors, captains and quartermasters, all mounted officers of every age and grade, are out on horseback all the time, jumping the obstacles and generally enjoying the exercise. The lieutenant-colonel and major of the school roster used to accompany the cross-country rides, leading the van, and jumping everything in sight as gracefully as any of the younger men. The French say, that "no man is a horseman who does not mount his horse daily."

Now, the French are no more vigorous than we, nor do they like to ride better than we; hence, I attribute the fact that they ride far more than we do, to their system—better horses, light equipment for pleasure riding, and fields arranged for exercising horses on track or on obstacles. All these items make riding a pleasure, and the more one rides, the better horseman one becomes.

For some reason there is a strong prejudice against the park saddle in our cavalry service; that it is a prejudice based on absolute ignorance of this saddle, goes without saying. There seems to be a prevailing idea that it is impossible to associate serious horsemanship with a park saddle and patent-leather boots. I wish that the holders of this opinion might all have the opportunity to ride with these French cavalry officers; I am quite sure that they, like myself, would arrive at the conclusion that the park saddle is the saddle for all work, except military work; and that clothing cannot unmake the man, any more than a saddle can affect his horsemanship. Moreover, we are, I believe, the only army in which the officers of cavalry use their regulation saddles when not on duty. Therefore, if an officer of our cavalry is called on to ride, away from his regiment, he is forced to ride the park saddle among civilians as well as among other military communities. But a man has to be taught to ride the English or park saddle, just as he has to be taught to ride his regulation saddle, for the two seats are not at all alike.

I am fully convinced that we should adopt this saddle for ordinary riding—everything except military drills and exercises. My reasons are as follows:

- 1st. It is light and very natty in appearance.
- 2d. It is far more agreeable for pleasure riding.
- 3d. Any one who can ride an English saddle, can cer-

TAKING OBSTACLE FIVE FEET HIGH AND SIX FEET THICK.



tainly ride a regulation saddle; just as an oarsman who exercises in a shell, can be counted on to row in a barge.

4th. Our cavalry seem to be the only horsemen of the day who do not use this saddle.

5th. I am convinced that sitting the trot is antiquated, that it is a method which was never intended for the American cavalry horse, that it is wrong in theory and practice, and that it is alike hard on the rider and on the horse. By the law of action and reaction, what is bump for the rider is bump for the horse. It is entirely logical that rising to the trot is far easier for the horse.

My further reasons for preferring to rise to trot are based on a full year's experience, and are as follows:

- 1st. It is more agreeable riding.
- 2d. It is less fatiguing to man and horse.
- 3d. One is less liable to cause sore backs.

4th. By this method the hardest trotting horse may be ridden with more or less comfort.

5th. When other nations, who have every right to be considered as good horsemen as ourselves, have adopted this method, it is time that we at least give it a trial.

Why is it that so many of our cavalry officers rise to the trot to-day, in spite of regulations, and why do our older soldiers seek pacing and single footing horses? Here in France a cavalry officer rides his horse at a trot up to his retirement, for hours at a time, and with *pleasure*.

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[NOTE.—Rising at the trot is not forbidden by our Drill Regulations; Paragraph 988 reads: "Many cavalry officers are now disposed to favor rising at the trot, as a relief from the close seat, and a desirable change to men and horses. With proper instruction, this practice may occasionally be found advantageous in long marches."—EDITOR.]

## THE FOURTH CAVALRY WITH GENERAL LAWTON IN LUZON.

BY CAPTAIN GEORGE H. CAMERON, FOURTH CAVALRY.



GENERAL EDWARD M. HAYES, U. S. ARMY.

[*Continued.*]

### THE NORTHERN EXPEDITION.

THE plan of operations for the fall of 1899 provided for a flanking movement under General Lawton, similar to that of April, but with the object this time of surrounding the insurgent army west of the Rio Grande, and capturing Aguinaldo and his headquarters at Tarlac. The advance

brigade of General Lawton's command, under Brigadier General S. B. M. Young, consisted of the Fourth Cavalry (except Troops E and K) the Twenty-fourth and Twenty-fifth Infantry, the Macabebe Scouts, under our Lieutenant Batson, Scott's Mountain Battery (a company of the Thirty-seventh Volunteer Infantry with the guns of the original "Astor Battery") and a detachment of engineers. Several changes in the makeup of the brigade occurred during the advance, as will be noted. The line of advance as planned was through the towns of Arayat, San Isidro, Cabanatuan and San José.

The regiment was ordered to San Fernando early in September. The movement was made by rail, the available rolling stock permitting but one troop to move daily. The box cars were so diminutive that we had difficulty in loading four horses per car, these four being fitted in, like shoes in a shoe box. Then, to guard against accidents, it was necessary to close the door. As there was no ventilation except through a tiny window at either end, our poor horses emerged from this sweat-box in the most woe-begone shape. The men, for whom no accommodation had been provided, cheerfully baked in the sun as they rode on top of the cars.

F, B, M and A made the trip on successive days, beginning September 5th. These four troops of the First Squadron had their American mounts. Next came I, with its pony mounts, then L, with a combination of ponies, fat band greys, and some Australian horses on probation, and on the 11th the headquarters. The men were quartered in abandoned public buildings and houses, while the horses were stabled in sugar camarines. On the 20th Captain Erwin brought up the Second Squadron (still dismounted), except G, which with the band was left in charge of the barracks at Pasay.

Nine troops were ready to start at command. Duty at San Fernando was the usual outpost, but work was incessant, as the recruits were still weak in mounted drill, and many horses were still unshod. Occasionally patrols were sent out beyond Mexico (garrisoned by the Twenty-fourth Infantry) to feel the country.

A platoon of Troop B, under Lieutenant Slavens, pushed as far as Santa Ana on October 3d, having a fight in

the streets of the town in which four insurgents were killed. On the same day Captain Cameron with Troop A drove the enemy out of a trench at Santo Niño, but lost Private Charles Radcliffe, who was shot in the head while riding at the point.

On September 15th Lieutenant Colonel Edward M. Hayes, who had succeeded Lieutenant Colonel Wagner, arrived from the States and hastened to San Fernando to assume active command of the regiment. The advent of a man of his rank and experience was most welcome, as it was felt that we should have a chance to be something more than the man-of-all-work. Veterans of the Civil War "hiking" in the Philippines were scarce, and Colonel Hayes soon became well known for his energetic campaigning. At San Fernando, also, joined Chaplain Oliver C. Miller, of California, attached to the regiment. He had come to the Islands with his State volunteers, was an active man, accompanying the column throughout the campaign, and exercised exceptional influence and control over the men.

The start of the expedition was delayed by the unusually heavy rains of this year. In every direction streams were overflowing their banks, and roads were mere bogs. On October 10th the order to move was published, and the 11th saw us on the road.

Lieutenant Munro had succeeded Lieutenant Dudley in command of L.

For transportation each troop had five carabao carts, carrying rations, ammunition, field forge, horseshoes, etc. Two days later each had three, a week later but one, and after two weeks we were reduced to our saddle pockets and were doing effective cavalry work.

During the whole campaign the saber was carried. Not once was it used as a weapon, but, strapped to the saddle, it lay in the mud, accumulating rust for the inspector, a useless burden to weary horses and a source of never ending profanity to weary men.

The efficient work of General Young's aides had improved the roads, mostly by bamboo corduroying, to such an extent that progress was excellent on the first day, and

the provisional brigade encamped at Santa Ana. Next morning the Twenty-fourth Infantry moved out to capture Arayat, which had been reoccupied by the insurgents after the close of the April campaign. The First Squadron was dismounted and marched nearly to the town as a support, but was never needed. Although strong resistance had been anticipated, a few of Scott's shells were sufficient to start the garrison on the run. By the 13th the roads had been repaired sufficiently to bring up the train.

Late in the afternoon Captain Erwin made a reconnaissance with C, D and H, along the road to the westward, by which the enemy had retreated the preceding day. He struck them in force, not over two miles from town, deployed the three troops, and, after a brisk engagement, chased them out of their intrenchments into the timber. First Sergeant Gustaf Will (D), Corporal Charles B. Hall (C), and Private Matthew Killian (D), were wounded.

Four days were spent at Arayat, waiting for the construction of a rope ferry across the swollen Rio Grande. This was the first of many delays encountered in the attempt to operate and supply troops in spite of rain and mud. In the construction of this rope ferry, and in the subsequent difficulties encountered in advancing his supply train, General Lawton was always on the spot, directing with the push and restless energy which earned for him in the '70's the name of "the best field quartermaster in the service." During the wait Captain Ballance's battalion of the Twenty-second Infantry and Batson's Macabebes joined the brigade.

On the evening of the 17th these two commands crossed on the ferry and took the advance up the left bank. Batson successfully executed a detour and tested his men in a hand-to-hand fight in a trench near Malibutad. The "little brown men" played havoc with their old enemies, and behaved in a manner that convinced Batson that they would meet any demand. The First Squadron moved across the river in the forenoon of the 18th, the first troop, A, establishing a line of couriers, and connecting at noon with Captain Ballance, who had captured the town of Cabiao without difficulty at 10 o'clock. The whole brigade and train reached

this town during the afternoon and night, after a terrible struggle with the boggy roads.

Next day the battalion of the Twenty-second again took the lead, closely followed by Colonel Hayes and the First Squadron. It was a most mortifying experience to progress slowly up the road as the way was cleared for us. The universal growl was vigorously voiced by Colonel Hayes, but with no success. The Colonel was anxious for a chance "to ride 'em down, sir!"

Some satisfaction could be taken in watching the business-like methods of the Twenty-second. This battalion pushed steadily up the road, the scouts, flankers and lines of skirmishers, when required, moving with a confidence and precision remarkable in such a country. A few men would search a thicket or an isolated house and then quickly resume their places, reminding one forcibly of the rapid work of a well-trained hunting dog. If the point marching on the road was fired upon, the men dropped prone, vigorously worked the magazine, and then quietly resumed the march. In the capture of large towns we invariably found the main resistance at a barrio, some three or four miles out. The Filipinos, in this way, prevented the possible destruction of women and children, who were in evidence in great numbers in the town itself. As a rule they sat in the windows under white flags and carefully counted our men marching in.

San Isidro was no exception. The barrio of Calaba had been intrenched and manned by the troops of Pio del Pilar. Captain Ballance made short work of it. Troops A and B were dismounted to form reserves for the wings of his battalion, but the advance into San Isidro, as far as they were concerned, was as uneventful as a holiday procession. Up the streets, far in advance, the same beautiful work could be seen, skirmishers peering around corners, climbing fences, now and then a few shots, but always the drill-like advance.

San Isidro was made a base of supplies. The incessant rains which hampered the movements of troops had proved of benefit in permitting the navigation of the Rio Grande as far as this town. Beyond this point, however, the river rose and fell with such startling rapidity that the trip of a boat

was a pure matter of luck, and accordingly steps were taken to equip the advance column with complete trains. A delay of over a week ensued, while General Lawton labored to accumulate rations and supplies in quantity to warrant a further advance.

During this time, in compliance with G. O. 153, A. G. O., the squadrons were reorganized alphabetically, and, in order to make two complete squadrons from the troops present, L was attached to the First and M to the Second Squadron. Captain Erwin, who had taken D and H back from Arayat to receive their horses at San Fernando, rejoined on the 23d and took command of A, B, D, and L. C Troop still dismounted was attached to division headquarters as train and station guard. I Troop, as usual, was General Lawton's escort. Captain Rivers commanded F, G, H and M. Troop G, under Captain Cress, was equipping at San Fernando and preparing to overtake the squadron. Lieutenant Slavens left the column on October 23d, to accept the position of aide on General MacArthur's staff, vacated by our Lieutenant Brown, who had been made a major and inspector of volunteers.

Lieutenant Dudley succeeded to the command of Troop B. This young officer made a most creditable scout on the 26th with one of his platoons, penetrating eight miles into the enemy's country and making an excellent report of the obstacles to be overcome. On the 27th we resumed the forward movement, with Captain Ballance still leading. The road to Cabanatuan runs parallel to the Rio Grande and crosses all of its tributaries. These streams, with steep banks and all bridges destroyed, proved almost a complete check to progress. Bamboo rafts were constructed, but they would carry, at most, one cart or about a dozen men, the horses and carabaos swimming the streams. At the Taboatin River the Twenty-second had a lively fight, with three casualties, in driving the enemy out of a trench on the opposite bank, but reached their destination, Santa Rosa, before nightfall. The First Squadron encamped for the night at the Taboatin River and spent the next day as engineers and freight handlers in the endeavor to insure the advance of

the supply trains. At this stage of the proceedings the whole division was strung out and struggling to pass rations up to the head of the column. We moved up to Santa Rosa on the 29th. Inasmuch as our horses had been living on the country for some time with satisfactory results, plans were here made to allow the cavalry to operate alone.

On October 30th Majors Augur and Morton were assigned to command the two squadrons. On the 31st two columns were started. Colonel Hayes, with Major Augur and the First Squadron, set out for Talavera by way of Cabanatuan, which was held by the Twenty-second. After successfully fording the broad Rio Grande at the latter town, we struck out into unknown country. All along the road, as we advanced, were abandoned carts and impedimenta, indicating a demoralized flight. The sight of these naturally induced a desire to push ahead, but the gait was inexorably hindered by the quagmires and marshes through which we were obliged to pass. Resistance was encountered in only one barrio. While the leading troop (A) dismounted and pushed the enemy aside, Colonel Hayes galloped the rest of the squadron into Talavera, capturing a storehouse filled with ammunition, shells, and brass howitzers, as well as a valuable library and seventy sacks of flour marked, "Portland, Oregon, U. S. A." The effect of this sudden appearance of the American trooper with his "caballo grande" was far-reaching. The garrison and the natives who scattered over the country spread wild tales of the man-eating horses as an explanation of their eagerness to get away.

The second column, under Lieutenant Colonel Parker, Forty fifth U. S. Volunteer Infantry (our Captain Parker), with Batson's Macabebes and Troops H and M under Captain Erwin, set out for Aliaga and occupied the town on the evening of October 31st. This command had the same difficulty with the impassable roads, one horse in M Troop miring so badly that he was ordered to be shot.

On entering the town Lieutenant Batson rode ahead alone and captured the telegraph operator, his instrument, and three important messages, as well as two ponies, two bull carts, and considerable property. The Macabebes,

scouring the country on the succeeding days, encountered the enemy on November 2d, near the barrio of Santiago in a well concealed position from which strong volleys were poured into Batson's command. Lieutenant Boutelle, Third Artillery, was killed when about to charge the position. Batson's inspiring example nerved the Macabebes in the rush that followed, and the insurgents were routed, leaving six dead in the trenches.

At the first news of the engagement, Colonel Parker took all the rest of the command (except ten men left in Aliaga with Captain Lockwood) and hurried to the scene. A running fight developed as soon as he left town, and skirmishing was practically continuous during the day. The two troops marched nearly twenty miles, crossing five streams by swimming, and succeeded in threshing out every barrio in the vicinity, with a result of twelve more dead insurgents, and only one casualty, Private Henry Rudenbeck slightly wounded. On the morning of the 3d, while the men were answering water call, they received a genuine surprise in the shape of three wild shells discharged from a piece of artillery in the neighboring woods. A detachment was hurried out and drove off the enemy, but, in spite of hard work, could not locate the gun. The command returned to the Rio Grande on the 5th, remaining in camp opposite Cabanatuan until the 8th, on account of the high water.

On November 2d a third column, consisting of Troop D, Third Cavalry, under Captain G. F. Chase, and Troop F, Fourth Cavalry, under Captain Rivers, made a raid on Bong-abong, eighteen miles eastward, captured the town without difficulty, killed three insurgents, secured twelve ponies and six rifles, destroyed a large quantity of powder, uniforms, and signal property, and returned to Cabanatuan the following day without casualty.

Colonel Hayes's command at Talavera could obtain no supplies, and found itself still anchored to Manila for rations, or rather half rations. The whole advance column had been reduced to half rations on October 25th. Three days were consumed by our bull carts in making the trip to Cabanatuan and return. This time was spent in scouting the country,

with the result that large quantities of ammunition, shells, reloading tools, valuable books and papers, were discovered hidden away in remote places. At San Domingo, Lieutenant Davis and Chaplain Miller came upon a hospital containing fifteen wounded Filipinos, abandoned in a starving and filthy condition. Some of these men had been wounded near Manila in the early stages of the war and some quite recently. In every case a bone was fractured. Here was tangible evidence of the statement that many wounded are carried away in every engagement. Colonel Hayes promptly sent the surgeon with medical supplies, and the Chaplain impressed natives to nurse these unfortunates. The hospital was policed and disinfected, and all wounds dressed and bandaged.

In the light of subsequent events, it is clear that Aguinaldo contemplated retiring from Tarlac to Bayambong, Nueva Vizcaya, by way of San José and Caranglan. When, therefore, the former commander of Talavera reported the loss of his town and the probable advance of American troops to San José, Aguinaldo flew into a rage and ordered him to recapture Talavera, assigning him 200 picked troops for the purpose.

Colonel Hayes's command was rudely awakened at 4 A. M., on November 7th, by a tremendous fusilade poured into Talavera from three directions. With the exception of two volleys from a "rattled" outpost, no reply was made to the storm of bullets. The men turned out and fell in with amazing speed and lack of confusion. In less than three minutes the whole command had assumed the positions previously designated by the squadron commander.

Then followed an hour of antics peculiarly Philippinesque. Their bugler, a splendid performer, playing on a Spanish keyed-instrument, executed an inspiring air, followed by the celebrated "Bolo charge," and then came the loud commands of the officers. From a distance of about 700 yards the insurgents rushed forward with cheers to a range of about 500 yards, halted, and sent in two or three high volleys, retreated to the original position, and repeated the whole program.

One could not help fancying himself a silhouette target for these "skirmish runs."

Our fire-discipline was excellent under the temptation offered, for, emboldened by our silence, the insurgents were within two hundred yards at daybreak. Colonel Hayes then gave the word, and the contents of the magazines from B and D Troops produced a wild stampede that our men could not follow. One wounded and two dead insurgents were picked up in the high grass, but the many trails from the town were covered with blood. Our loss was one pony killed. Fifteen minutes after our magaziné fire, the men were busy cutting rice grass with their mess knives and singing the familiar "Way Down Yonder in the Rice Field."

Lieutenant Harris rejoined in the forenoon, with a detachment of convalescents from Manila, and in the afternoon General Young and his staff arrived, bringing orders for a move on San José the following day. The eighteen-mile march was uneventful. General Young, with the Macabebes, taking a more direct route, reached San José an hour ahead of us, met with no resistance, and captured more stores and machinery of the abandoned Cabanatuan arsenal.

At this town we received sad news. Troop G, which, as previously stated, had been left in our barracks at Pasay, received hurry orders to join General Schwan's brigade, organized to clear up Cavite Province, where the insurgents, under Trias, had become decidedly aggressive. Captain McGrath, with Lieutenant Purviance and fifty-two men, dismounted, left Pasay at 11 o'clock P. M., October 5th, reaching Zapote bridge after three hours' march. Next morning the troop joined the brigade at Binacayan, where eleven companies of the Thirteenth Infantry, three of the Fourteenth, Reilly's battery Fifth Artillery, Tate's mounted troop of the Third Cavalry, and Castner's company of Tagalog scouts, were assembled. In the movement on Cavite Viejo on the morning of October 8th, G Troop and the Tagalogs had the advance position. The town was deserted, but a reconnaissance disclosed numbers of insurgents holding the road on to Novaleta.

Captain McGrath was now placed in command of the ad-

vance, with two companies of the Fourteenth Infantry under his orders, to be used as reserve. Scouts having ascertained that the strong insurgent position on the Rio Mindlat could not be turned, a frontal attack was begun at about 11 o'clock A. M. G Troop advancing, deployed on the right of the main road, and Castner's company on the left, each with an infantry company in support. The enemy started continuous fire from the time the line arrived within a thousand yards, but as usual shot high. Advancing by rushes from dike to dike, and firing excellent volleys, our men pushed on, seemingly without casualties, to about 300 yards from the trenches.

Suddenly the insurgents discharged a cannon, which was cleverly concealed under a nipa shack, and Captain McGrath fell with a jagged wound in the thigh.

The advance was not checked, although the supports suffered heavily from bullets passing over the skirmish line, and the line itself was under a tremendous fire. Corporal John P. Martin and Private William J. McIntyre, both of G, were wounded before the trenches were finally carried. The troop captured the cannon that had laid their captain low, which proved to be an old muzzle-loading brass, two and one-half inch piece, about thirty inches long, and had evidently been loaded with scraps of metal. Little resistance was met in the remainder of the march into Novaleta. The following morning Rosario was entered before 9 o'clock, and communication was established with a launch from Manila, bringing rations and needed supplies. The cargo was unloaded with alacrity, and all the wounded of the column were hurried back to Manila by water.

In the afternoon the brigade in two columns set out for San Francisco de Malabon, spending the night in bivouac on the road. The advance on the morning of the 10th was resumed with caution, as rumors of Filipino concentration had been received. As a matter of fact, however, Trias had disbanded his force, and satisfied himself by annoying the column with small patrolling detachments. After entering the town without difficulty, a battalion of the Thirteenth Infantry pushed on towards Buena Vista, and ran into a position from which they suffered considerable loss. On their return

they came upon a Filipino field hospital, flying the Red Cross flag and containing five dead and twenty-four wounded insurgents.

On the 12th, with G Troop and Castner's scouts again leading, a march was made straight across rice fields for four miles to the Imus road, and thence to Dasmariñas, where orders were received to return to Manila, since little headway could be made against the scattered guerilla bands. The brigade was accordingly marched back to Bacoor on the 13th, and was there disbanded, the troop continuing the march back to our barracks that evening.

Captain McGrath, under the best of care in the hospital at Manila, lingered until November 7th, but the climate and his run-down condition from hard field service were against his recovery from a wound that would have been serious in any case. In McGrath the regiment lost a genial comrade, a talented, brainy officer, and as brave a man as ever wore a uniform. Generals Schwan, Lawton, Otis and Miles successively concurred in recommending a brevet for his exceptional gallantry in the action in which he was wounded.

A telegram from Manila, forwarded to General Young, read: "Your most important objective, Caranglan, etc." No time was lost in complying with these instructions. With three days' half rations in the saddle-bags, Colonel Hayes set out early on November 9th for Caranglan, a town where the two main roads to Bayambong unite. During the forenoon the swift Rio Grande was forded no less than eleven times. At Puncan the scouts captured a small detachment with five Remingtons, and shot a boloman who attacked instead of surrendering. The trail to Caranglan showed the footprints of a native running to give the alarm, and we found that the town had been abandoned only an hour before our arrival. One Domingo Colminar, a secretary of Aguinaldo, was found in the best house in town. He had been engaged in making preparations for his chief's retreat, and had chosen to remain with his wife, who was in a delicate condition.

On the 11th an outpost reported the approach of a large body of natives. Colonel Hayes immediately rode out to investigate. They proved to be 167 bolomen from Nueva Viz-

caya, sent to act as Aguinaldo's escort. To our surprise, they evidently did not know Americans when they saw them, but straggled in, salaaming most profoundly to the Colonel. Once concentrated in the plaza, they were quickly surrounded and disarmed in spite of the frantic exhortations of Colminar from his window. Their bolos (each carried one large and one small knife) were distributed to the men for use in cutting grass.

Meantime, the ration question was serious. On the 10th and the 12th an officer with twenty men returned to San José and brought up two days' half rations packed on the military saddles. Colonel Hayes having been summoned back to San José on the 13th, took B Troop and all the prisoners, thus reducing the supply problem to some extent; but on the 14th heavy rains set in, lasting five days and swelling the mountain streams so that fording was impossible. During this period the command lived on carabao meat. Famished men experimented with bamboo cabbage and other unwholesome greens, and ran up a tremendous sick report. On the 18th, Lieutenant Holbrook, the efficient quartermaster and commissary, managed to work his way up from our train at San José after a two days' test of pluck and endurance, and on the 20th Major Augur received word to abandon the town.

When the start for the return was made, fully half of the eighty sick men were clinging to the pommel with both hands. Two fell off within a mile, and many were swaying. Just in the nick of time the Vizcayans, liberated by Colonel Hayes, appeared on the scene bound for home. With a promise of rice and pesos they were persuaded to act as bearers, and we resumed the march. Before we reached Puncan, eight soldiers were in litters and a dozen or more had to be coaxed back into the saddle every half mile. The second day's march was even more trying. At San José each troop established two or three sick wards, the well men were detailed as nurses, and every effort was centered on restoring the strength of the command. Farrier Michael Sullivan and Private William H. Erwin (A), and Private Peter Giewatz (D) were buried at San José, but more than twenty men

who had taken part in the Caranglan trip were subsequently sent back to the States and discharged for disability.

It was disappointing to learn that Aguinaldo had struck further north, and that General Young had pushed on his trail with the Macabebes and such troops of the Third Cavalry as could overtake him. General Lawton himself had abandoned the work of superintending the supplies, and had hurried forward to Huminan and Tayug, where our Troops G and F were holding the towns and furnishing couriers and escorts.

On November 22d, First Lieutenant H. A. Sievert, promoted to the regiment, joined from Manila and was appointed squadron adjutant of the First Squadron. On the same day Second Lieutenant J. N. Munro, with a detachment of fifty men selected from the four troops of the First Squadron, and three native guides, set out for Bayambong. His route via Caranglan, Salazar, Dupax, and Bamban, was a difficult mountain trail that taxed the strength of the ill-fed horses. From Dupax, which he reached without resistance at noon of the 25th, he sent out scouting parties to ascertain if the rumored strength of insurgents was correct. No signs of the enemy could be discovered, but about noon of the next day a flag of truce appeared, ushering in an American prisoner and the Presidente of Bamban. From them Lieutenant Munro learned that his party of fifty men was supposed to be the advance-guard of a large force, and that preparations for surrender were well under way. He accordingly sent a courier back for reinforcements, and Colonel Hayes dispatched Captain Erwin up the trail with H Troop and details bringing his strength up to an even hundred. More prisoners came in to Munro next morning, among them an American who turned out to be a secret service man of General MacArthur's. This man had a full knowledge of the situation, spoke Spanish and the native dialects, and proved of great benefit. Munro sent him back with a guard to Bamban, whence he telegraphed to General Canon in command of the district, and soon secured his consent to a surrender on the next day. On the next morning, however, Lieutenant Castner with his native scouts pushed into Bam-

ban from the west, and, learning of Canon's willingness to surrender, set out for Bayambong with characteristic energy and promptness. Munro reached Bamban an hour later, discovered what had happened, and started a stern chase.

Castner was soon overtaken, and the two young officers after a lengthened parley decided that it was a case of "first come." Munro had a horse, Castner a pony; result: Munro received the surrender of General Canon, fourteen officers and about a hundred men with sixty rifles, and liberated 128 Spanish and seven American prisoners. In his report of this expedition General Lawton wired as follows:

"Chief of Staff Manila:

"Lieutenant Munro is deserving of highest commendation."  
"LAWTON."

The town and the surrendered arms were turned over next day to Captain Batchelor, Twenty-fourth Infantry, who, with a battalion, followed Castner's trail. On November 30th Munro started on his return to San José, accompanied by the American and most of the Spanish prisoners. At Bamban he met Captain Erwin's advance party and received most needed rations. The return trip was most exhausting on the horses, many of them having lost shoes on the rocky trails.

Meantime word had been received at San José, that General Young was in hot pursuit of Aguinaldo and that General Lawton had been recalled to Manila to assume charge of a campaign in the south of the island. He sent word to Colonel Hayes that he would take six troops of the regiment south with him. Our supplies finally having overtaken us, the succeeding days were one long stretch of horseshoeing. On December 4th, F and G came down from Humingan and Tayug, and C and I arrived with General Lawton. On the 6th Headquarters and A, B, D, F, G and H, marched to Talavera, leaving L stationed at San José and M at Tayug. On the 7th the command reached Cabanatuan. Next day, under General Lawton's orders, the two squadrons were trimmed down to sound men and horses, with a result that 128 men and eighty-eight horses were left to accompany the supply trains.

Our destination was Sari Miguel by a detour through Penaranda, intended to cut off the insurgent forces of Pio del Pilar. The command back-tracked to the Tambo River and then struck across to Penaranda, where a halt was made until 5 P. M. The march was then resumed on a mountain trail, and was kept up until almost midnight, plunging into deep streams and struggling through dense brush in inky blackness. It developed afterwards that the attack on San Miguel planned for the 10th, was postponed a day; but Colonel Hayes knew nothing of this, and, having received instruction to be behind the town at a fixed time, plodded along through the night until his guide assured him that he was on the spot. Shortly after leaving camp on the 10th, the scouts ran into a body of about 200 insurgents. The Second Squadron in advance deployed across open fields, and advanced upon the enemy's position. G and H were met by a brisk fire, Corporal Winthrop Richardson (H) having his thigh bone shattered by a Remington bullet and Corporal Lorenzo de Clairmont (B) receiving a severe wound in the arm and breast. The latter was interpreter and stood directly behind Colonel Hayes.

Our volleys soon routed the insurgents, who, from their own statements, lost four killed and six wounded. The town of Sibul was reached at 3 P. M. On the outskirts the scouts found an abandoned cart with nine Mausers and some of Pilar's records and personal effects. At 8 P. M. Major W. D. Beach, Inspector on General Lawton's staff, sent up a powerful signal rocket, which we learned afterwards was seen and reported at San Isidro. Irregular skirmishing took place as we closed in on San Miguel next day. The First Squadron was sent forward to reconnoiter the city, but, learning that it was occupied, a detail under Lieutenant Dudley carried in dispatches and a request for an ambulance, while the rest returned to about the best camp we had while on campaign. Corporal Richardson's exposure brought on gangrene, and he died in the San Miguel hospital on the 13th.

Next day, December 12th, Colonel Hayes proceeded southward to carry out his instructions to destroy a reported camp of the insurgent general, Pilo del Pilar. Lieutenant

Arnold, with the regimental scouts, met with slight resistance in the advance, and just before noon reached the famous Biac-na-Bato, a natural, rocky stronghold. The garrison had fled, except a few men who were easily driven out. Leaving their horses, the detachment pushed well up the mountain trail, finding no enemy, but destroying a storehouse containing uniforms, tools and supplies. Major Morton organized a party of volunteers to explore the mountains and trails next morning. The party split up, and one small detachment, under Lieutenant Sievert, destroyed a dozen large shacks with timber floors, which probably were constructed for Pilar's camp. During the day Colonel Hayes received a message from General Lawton to return to San Miguel. After camping at the same place as on the night of the 11th, we reached the town on the morning of the 13th and received the news that the campaign was over, together with a congratulatory letter to the Colonel, enclosing a copy of General Lawton's report to Manila:

"SAN MIGUEL, December 13th.

"*Chief of Staff, Manila:*

"I have wired you to day report from Colonel Hayes, commanding Fourth Cavalry, just received, announcing the capture and occupation of the famous insurgent stronghold, Biac-na-Bato. From information furnished by residents of this city, it is learned that Biac-na-Bato, or "Split Rock," as the name indicates, is a gigantic cleft in the range forming a natural fortification, located South of Mount Madlom, Mount Mabio being higher and to the rear or east. There are no inhabitants except garrison; country rocky, no crops, plenty wood and water; was successfully held on January 8, 1897, by sixteen insurgents against nine hundred Spaniards. Again I feel it my duty to invite the attention of the general commanding to the gallant and effective work of this command. I heartily concur with Colonel Hayes in his commendation of Lieutenant Arnold; and I also wish again especially to commend Colonel Hayes as worthy of special and substantial consideration for faithful and gallant service in the presence of the enemy under unusually trying and difficult conditions. I have directed Biac-na-Bato to be held for the time being, until the surrounding country can be examined.

"LAWTON,  
"Major General."

At San Miguel the command was broken up. Colonel Hayes with Major Augur and Troops A, B and D, marched on the 17th to Baliuag, en route to Manila. Major Morton, with F, G and H, remained to garrison the towns of San Miguel, Norzagaray and San Rafael. At Baliuag the First Squadron was entertained by the hospitable Third Infantry, who set out the first fresh beef and bread we had seen for three months. Their bakers must have had "night shift" after we left. December 18th saw the squadron back in quarters at Pasay. The news that we were to move out January 3d with General Schwan's southern expedition, tended to make everybody get the full measure of enjoyment out of the short respite from field work, and troop commanders spent all the savings derived from the three months of half rations, on holiday dinners that are still talked about.

During the period in which the headquarters and the majority of the troops were under General Lawton in the north, Troops E and K were performing equally arduous work with General MacArthur along the railroad. In the advance on Tarlac, and subsequently on Dagupan, these two troops, together with a detachment of scouts under our Lieutenant Slavens, were always out in front and had frequent skirmishes with the enemy. At Porac, November 2d, Lieutenant Hawkins, commanding Troop E, led a mounted charge and earned praise for the work of his men, as well as mention for his own coolness and courage. At Magalang, November 5th, K Troop had two men severely wounded, Privates William Brett and John L. Jackson. In this spirited engagement, which lasted over three hours, the insurgents left eighteen dead on the field. At Bamban, November 9th, Lieutenant Hawkins and ten men of E Troop formed part of a party of nineteen, who, under General Bell, succeeded in arriving in rear of a trench containing one hundred insurgents. The party charged, and, without a single casualty, killed and wounded twenty-nine insurgents, and captured six. General MacArthur, in reporting the action, characterizes it as "a performance, so far as I know, as yet without parallel in this campaign, as illustrating a combination of skill, determination and audacity." At Capas, November 11th,

Private Thomas Stacke (K) was instantly killed, and on the same date, at Concepcion, E Troop had two horses killed. The two troops after continuous scouting, skirmishing and hard marches, settled down at Bayambang in December to patrol and scouting work from garrison.

About 2 o'clock on the morning of December 20th, Major Beach arrived at our barracks at Pasay with the appalling news of General Lawton's death. With his personal escort, Troop I, two squadrons of the Eleventh Volunteer Cavalry, one battalion each of the Twenty-seventh and Twenty-ninth Volunteer Infantry, and two guns of Taylor's battery, the General had marched all of the rainy night of December 18th, to the attack of the town of San Mateo. The swollen river caused considerable delay in crossing the troops next morning, under the fire of concealed insurgent sharpshooters. As usual, the General moved to the very front to direct movements. In his yellow rain-coat, he made a most conspicuous target, and his staff, impressed with the danger, urged him to seek cover. A few moments later he fell, shot through the heart. His body was removed, under guard, to the Pumping Station, and from that point to his home in Manila was escorted by the First Squadron of the regiment in which he had served eighteen honorable years. The Secretary of War, in publishing his death to the army, pays this tribute:

"He fell in the fullness of his powers, in the joy of conflict, in the consciousness of assured victory. He leaves to his comrades and his country the memory and the example of dauntless courage, of unsparing devotion to duty, of manly character, and of high qualities of command which inspired his troops with his own indomitable spirit."

Henry Ware Lawton is one more name added to the list from which the Fourth Cavalry draws its regimental motto:

*"Decessorum Virtutem Aemulemur."*

## FROM TEXAS TO DAKOTA.

THE EIGHTH CAVALRY'S LONG MARCH.

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BY CAPTAIN F. E. PHELPS, (EIGHTH CAVALRY), RETIRED.

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**I**N the spring of 1888 the Eighth Cavalry was stationed in Texas, and the different troops were scattered from Fort Brown, near the mouth of the Rio Grande, to Fort Hancock near El Paso, the regimental headquarters and five troops being at Fort Davis. The regiment had come down from New Mexico in the fall of 1876 and the spring of 1877, and had been more or less actively engaged in scouting, patrolling the Rio Grande, and other similar duties, for eleven years.

The regiment had never been assembled. Officers who had served for years in the regiment had never met; some had never seen the Colonel, although he had been in command several years. When the troops concentrated at Fort Concho, the writer met for the first time the then accomplished regimental adjutant, although the latter had been in the regiment for six years, and renewed acquaintance with others whom he had not seen for eleven years. The result of this scattering process was not beneficial to the discipline and morale of either officers or men. Serving at widely different posts, under different post commanders, who sometimes had widely divergent views as to discipline, drill, equipment, care of men and of horses, officers naturally differed on many points, and this made more or less friction, which must have caused the regimental commander some worry and made his task a much harder one.

Neither did we expect the order to move. For eight or more years it had been periodically rumored that we were going to Dakota this year; we were going next year; we got to looking for this rumor like the vernal equinoxes; we were



EIGHTH CAVALRY OFFICERS ON THE MARCH FROM TEXAS TO DAKOTA. MAY TO OCTOBER, 1888.

going by rail, leaving the horses behind to exchange with the Seventh Cavalry then in Dakota; some brashly announced we should march, and were jeered at by the wise-  
acres.

The captain of F, then at Fort Davis, desired to put in a troop garden, but naturally wanted to know if he should stay there long enough to gather his crop; and accordingly wrote a personal letter to a former captain of the regiment, then a major in the Inspector General's office at Washington, to see if there was any likelihood of a move; in reply the Inspector informed him that he had gone to the Adjutant General's office, and had been authorized to say that the regiment would not be ordered to Dakota or anywhere else that year, and that he could go ahead with safety; and yet, in less than ninety days the order came out like a thunder clap from a clear sky, directing the move to begin about the middle of May by marching; all heavy baggage and the authorized allowance for officers to go by rail.

A change in the station of the regiment to so great a distance fell with severity, from a financial point of view, on the married officers and soldiers. At that time the authorized allowance of baggage for officers was much smaller than now, and for a lieutenant would about cover one bedroom set, a few boxes or chests of bed clothing and wearing apparel, a barrel of crockery and a few folding chairs.

At Fort Davis the only lumber for crating to be had was "pitch pine," which is about as heavy as lead, and, as the weight of the crates was counted in, the amount of furniture that could be transported was small. The railroad put a prohibitive rate on anything shipped outside of the government bill of lading, and hence many officers had to abandon some of their household goods.

One officer found the freight on his wife's sewing machine, crated, would be about as much as a new machine would cost, and, owing to the fact that the post was to be abandoned, there was absolutely no sale for it, so he smashed it with an axe rather than to leave it for some Mexican. Another sold a couch that cost him \$25.00 for \$2.00, while a field officer abandoned a fine black-walnut bedroom set. One young

officer, who had a very handsome and valuable lot of silverware, mostly wedding presents, forgot to enter his silver chest on his bill of lading, and when he arrived at Fort Sill he found a letter from the railroad agent at Marfa, saying that said box was not on any bill of lading, but, as it bore his initials, he had put it in with the troop baggage, and hoped it would go through safely; but that, of course, the railroad could not be held responsible if it was lost. The amount of worry the young man went through before he arrived at his new post in Dakota and found the chest safe, he will never forget, and when he reads this, he will doubtless remember the comforting suggestions made to him by his troop commander, how he could explain to his better-half in case the silver was lost.

Trusting to the positive assurances that the regiment would not move, officers brought their families out to Texas and had to hustle them back again at heavy expense, and board them in the East until "papa got to his station." This caused unholy glee upon the part of the unmarried, but caused a severe financial strain on the lieutenant's pay, much of which would have been spared if, as now, several months' notice had been given before a change of any great distance was made.

The colonel, E. S. Otis, was an invalid and did not march with the regiment; and the Headquarters, Band and Troops A, C, D, F, H, together with L which had come down from Fort Hancock, all under command of Major John A. Wilcox, moved out on the 15th of May, en route to Fort Concho, which post had been designated as the point of concentration.

The lack of experience in marching even five troops together was impressed upon us, when we entered the cañon only six miles from Fort Davis. The road leads down a rough, rocky hill, much of it cut on the hill-side, here thickly covered with loose rocks and cactus. The wagon train, two wagons to each troop, and two to headquarters, carrying rations and grain, had been sent ahead, and was overtaken by the column just as it started down the hill. Instead of either halting the train or the column, the troops were pushed past

on the hillside, causing much confusion, casting many shoes, and unnecessarily tiring both men and horses.

There was no order for camping, each troop squatted down where the captain chose, so long as it did not pass the troop in advance of it, stretched its picket line, put one sentry over it, and everybody went to sleep, except the sentry. The camp was made in the narrow part of the cañon, thickly underbrushed, and the troops were all huddled together; and there was little or no grass, while by going ahead a couple of miles, there was a broad, level flat, and plenty of wood, water and grass. No pickets or outside sentries were posted, and it may be remarked now, that during the entire march from Texas to Dakota, there never was any guard except the sentry over the picket lines. Owing to the quietness of the Indians that spring, perhaps guards were unnecessary; but certainly a fine opportunity for the instruction of guard, pickets, and patrols was lost.

Before leaving Fort Davis, Troop F devised a plan by which they could be sure of having rations and cooking utensils promptly in camp, without relying on the quartermaster's train. Each enlisted man contributed one dollar, each officer five dollars, and with this a light, strong spring wagon and harness were bought. Two spare troop horses were used, driven by an old soldier who was waiting his transfer to the Soldiers' Home, and was good for nothing else owing to age, whiskey and rheumatism; and in this wagon was carried the troop mess-chest containing two days' rations, the cooking utensils, and a small mess-chest for the officers.

This wagon followed closely after the troop, and being light and lightly loaded, had no trouble in arriving in camp as soon as the troop, thereby giving them their supper at once. Often the troop had their meal and were asleep hours before the heavily loaded six-mule wagons came up. On several occasions some of the troop wagons did not get into camp at all until next morning. On arrival at the permanent station, Fort Yates, the wagon was disposed of, and the proceeds presented to the troop fund.

The march to Fort Concho was exceedingly hot, dusty and uncomfortable. The marches were long, owing to lack

of water; there was little grass, the men and horses were not hardened to the work; no attention was paid by the commanding officer to the gait of the leading troop, or to the protection of the water holes on arriving in camp; mules and horses waded, and dogs wallowed in the water, before the supply for cooking had been secured, and there was a general "go as you please style" about the march that was hardly excusable. Another thing that caused great discomfort was the fact that the commanding officer rode a horse that had a very fast walk, and, no doubt without his knowledge, kept the troops sometimes for miles on a jog-trot to keep up.

No disposition of disabled horses was ordered, and instead of being shot they were abandoned, many of them being picked up by Mexicans, turned into the nearest military post, and the reward of twenty-five dollars per head was paid for broken-down animals that would not, and actually did not, bring that much at auction, when condemned. Many of the horses were old and unfit for service when the regiment started, and should have been disposed of at once. Troop F abandoned three the second day out, all of which were taken to Fort Davis by a Mexican; and the reward was collected.

Finally the entire regiment was, for the first time in its history, together and at Fort Concho, and the final orders for the long march were given out. Lieutenant-Colonel J. K. Mizner assumed command, and his orders were short and sensible.

No copy of the order issued is at hand, but substantially it was as follows:

The regiment was divided into three battalions of four troops each, to be commanded respectively by Major J. A. Wilcox, Major R. F. Bernard and Captain Louis T. Morris..

To headquarters was assigned two six-mule wagons, one to the band and two to each troop. The wagons were to carry ten days' grain and ten days' rations, besides the tentage, etc. One tent was to be carried for each field-officer, one for each captain, and one for each two lieutenants, with one common tent to each mess for a cook tent. One Sibley

tent for each eighteen men was provided. All officers' baggage was limited to one small trunk and a roll of bedding. No cots or mattresses were allowed. This last was not enforced, the commanding officer himself setting the example by taking a cot; and most of the officers, if not all, did the same.

Each enlisted man was to carry his carbine and sling, prairie belt and twenty rounds of ball cartridges on his person, and lariat, picket-pin, tin cup, canteen and nosebag on his saddle. In his saddle-bags he carried one change of underclothing. His blanket roll was carried in the wagon. Each troop also carried one thousand ball cartridges in the troop wagon, but as this was generally, if not always, placed in the bottom of the wagon, covered with tents and rations, or forage, it could not have been gotten at easily had necessity required it. All men's sabers and pistols were packed and shipped by rail. Officers carried sabers strapped to the saddle, and each first sergeant carried his pistol. The men were to wear blue shirts and trousers, blouses, boots and campaign hats; officers the same. Troop commanders were allowed, if they saw fit, to provide their men with raincoats or slickers. Several troops purchased what was known as the "Fish brand" slicker, which is of a yellow color, light and durable, and which covered the wearer and his saddle down to below his boot tops, and proved to be an almost perfect protection in the heavy rains that fell during the march, sometimes lasting all day.

The order directed that reveille should habitually be sounded at 5 o'clock, boots-and-saddles at 6, and the march begin at 6:10; and this was almost invariably closely adhered to.

The habitual order of march was as follows: First, the commanding officer and staff, followed by the band mounted. Next came the battalions, which alternated daily, and in each battalion the troops alternated daily, so that in turn each troop led its battalion and the regiment. The distance between battalions was habitually three hundred yards, and between troops one hundred yards, and this was fairly well kept, though some troop commanders were careless about

keeping the distance, thereby getting the benefit of the dust from the preceding troop; and this dust, especially in the narrow lanes of Kansas, which were sometimes lined on both sides by tall osage orange hedges, was very disagreeable. Straggling was strictly prohibited, and the entire march was singularly free from this vice. The shipping by rail of sabers and pistols was particularly welcome, and experience showed that the articles carried were all necessary. Side-lining was to be rigidly enforced, and, as a consequence, not a stampede of horses occurred.

The officer of the day was detailed from the captains, the officer of the herd from the first lieutenants, and the officer of the guard from the second lieutenants. The officer of the herd saw that the horses of each troop were taken to the best grass, within easy distance; that the horses were properly side-lined and guards vigilant. Not only was there no stampede, but it is believed not a horse was lost on the entire march by theft or straying, which, in view of the numerous desertions en route, shows that guard and herd duties were well performed.

Lieutenant J. C. Byron was sent ahead as engineer officer to select camps and procure wood, hay, and, when necessary, to buy water and rent camp sites.

As a rule the farmers along the road seemed to look upon the arrival of the regiment as a fine chance to make money, and it was nothing unusual for the quartermaster to have to pay ten to fifteen dollars for the privilege of watering the stock, if the water happened to be on private property, or, if as sometimes occurred, the men had to get drinking and cooking water from wells. As a rule, camping sites had to be hired for the night, and outrageous prices were sometimes demanded, and the amount to be paid had to be fixed by a board of officers.

Fresh beef was, when possible, purchased daily, and this was so successfully done that no complaint could be fairly made of a lack of good meat on the entire march.

From Fort Davis to Fort Concho the band was mounted on horses borrowed from the troops at Fort Davis, and naturally enough, perhaps, the troop commanders did not loan

the best or easiest-gaited horses, and for several days the band afforded much amusement to everyone; but they soon became hardened to the saddle, and before Fort Concho was reached, they got along as well as the average trooper. At Fort Concho, they received new horses, and as they led the regiment through the town of San Angela playing, of course, "The Girl I Left Behind Me," they looked well; and from that time the laughing at the band ceased. Guard-mount was always held in the evening, the band attending, and in good weather they gave a concert at night. They certainly worked hard, and probably never knew how much their music was appreciated.

The staff consisted of the adjutant, First Lieutenant Chas. M. O'Connor, whose efficiency, good nature and hard, common sense smoothed over many difficulties, and won the esteem of every officer and man. The quartermaster was that combination of sizzling energy, indomitable pluck, red-hot hair and temper, that made First Lieutenant Q. O'M. Gillmore, the very man for the place. No officer nor man worked so hard, none could have been so successful, and none received less credit—at least at the time.

At times, especially between old Fort Kearney and Fort Sidney, the roads were frightful, and it is a wonder the train got into camp as often as it did.

The Medical Department was represented by Captain and Assistant Surgeon Guy S. Edie. Not a death occurred on the march, and the health of the command was good, due largely to his care and precaution.

On June 2d the regiment moved out from Fort Concho, and took the Long Trail for the Dakotas. It is not within the scope of this article to describe the daily marches. July 16th the column reached Fort Riley, Kansas, where we met the Seventh Cavalry and enjoyed their royal—no, their American Army hospitality for three or four days. We exchanged transportation with the Seventh. Ours consisted entirely of government six-mule teams, except one ambulance, and was in good shape. The transportation we received from the Seventh was partly of the same kind, but mostly consisted of hired civilian four-horse teams and

wagons, and these were in a miserable condition. Time and again they broke down, or failed to get into camp before dark, despite the herculean and profane efforts of the quartermaster and his wagonmaster, and at least once, at Willow Island, we had to delay three days to rest them up. The annoyance and discomfort they caused, was the worst feature of the march from Fort Riley to Fort Meade.

As on the arrival at Fort Riley, the march was practically half finished, it should have been easy to see the weaknesses that existed and the faults that could have been corrected—and were not. One thing was conspicuous—the splendid conduct of the men. It was to be expected that on a long march, extending now over nine hundred miles, partly through a country thickly dotted with towns and villages, some disorders would occur, and more or less drinking and straggling be seen; but in this respect it was matter of congratulation that the conduct of the enlisted men was beyond praise. Kansas was supposed to be a prohibition State, but it was notorious that beer and whiskey could be had in every one of these towns; and while a few cases of drunkenness did occur, there was not a single complaint of rioting, disorder, or assault.

That this good discipline was almost entirely due to the careful personal supervision of the troop officers and noncommissioned officers is undeniable. If the battalion commanders took any special interest in the matter, it was not noticeable. In fact, the battalion commanders were simply figureheads, and we could have dispensed with them without detriment. It is not intended as a reflection on them personally—two have gone to the other shore—but it is believed it was due to the fact that they had no special authority or special orders. Except at the muster of June 30th and of August 31st there was not an inspection of men, horses or equipment made by the regimental or battalion commanders, and the writer, who commanded his troop from the second day out from Fort Riley to Fort Meade, cannot recall an instance when the battalion commander gave him an order, or evinced the slightest interest in his troop. The regimental commander should have noted and corrected this.

The regimental commander also had a habit of giving the trot for the last mile or two of the day's march, which was very hard on men and horses, and did no possible good, but harm, especially at the end of a long and tiresome day's journey. During the day, alternate walking and trotting would have been desirable, but was not given.

There was no great hurry and there was no reason why the regiment should not have lain over every Sunday to rest and recuperate, to allow the men to bathe and wash their underclothing, etc.; but this was never done.

The regimental commander was fond of regimental drill while on the march, generally as we approached camp. When officers, men and horses were tired, dusty, thirsty and anxious to get into camp, drilling was worse than useless, and certainly did no good.

We, of course, did not know what orders, or exactly what authority, the battalion commanders had, but anyone acquainted with them would believe that, if they had had proper orders to inspect the troops under them, to supervise the fitting of saddles, the care of sick horses, the grazing of the herds, and similar matters, they would have attended to them.

The large number of sore-back horses was due primarily to the careless fitting of saddles, and, possibly, to improper folding of the saddle blanket, but largely to the gross carelessness and inattention of the riders, to whom, in this respect, too little attention was paid by troop commanders. Once or twice the commanding officer ordered men who had sore-back horses to walk and lead them; but this was spasmodic, and only lasted two or three days.

At last all was ready, and the regiment moved out on its long march for the Dakotas. The line of march was via Springfield, Kansas, and Hardy, Nebraska, to old Fort Kearney, where we had one day's rest; then west along the Union Pacific Railroad to Fort Sidney. This was probably the hardest part of the march. Rain fell almost continuously, the black soil of the prairies was cut up into unfathomable mud, the road which closely followed the railroad had probably been little used and never repaired, and, taking it

altogether, the progress made was better than could have been expected.

We lay over one day at Fort Sidney, and then struck out almost due north for the Black Hills. It was now September, the days only pleasantly warm, the nights cold and crisp; on September 3d, we arrived at our Mecca, Fort Meade, Dakota Territory, and our journey was practically finished.

The headquarters and six troops remained here, while two troops went to Fort Yates, Dakota, two to Fort Keogh, Montana, and two to Fort Buford, Dakota. The total distance from Fort Concho to Fort Meade was 1,470 miles, taking eighty two marching days—an average of about eighteen miles per marching day.

One day was spent at Fort Sill, one at Fort Reno, four at Fort Riley, one at Fort Kearney, one at Fort Sidney, four at Willow Island and one at Fort Robinson.

The troops that went on had tiresome marches yet to make—the two that went to Fort Yates two hundred and twelve miles; those to Fort Keogh about the same, while all are entitled to credit for the additional distances from their respective posts in Texas to Fort Concho. Troop E marched from Eagle Pass, Texas, to Fort Buford, about 2,400 miles.

So far as known, this was the longest continuous march ever made by a regiment in this country, and perhaps in any other.

What the object of the "powers that be" was in requiring us to march instead of going by rail, has always been a mystery. It was rumored that it was to test the marching powers of men and horses, and if this were true, it certainly did, much to their detriment. It is impracticable now to say how many horses died or were abandoned en route, but the number was large, and at the average cost price then, \$150.00 each, this item of expense must have been heavy; and adding the cost of delivering rations, purchasing forage, wood and water, loss of equipment, wear and tear of wagons, hire of civilian wagons, it is believed the entire regiment could have been transferred by rail very much cheaper; not taking into consideration the men lost by desertion, many of whom

deserted from fatigue and disgust alone, and the loss of some officers and some men, who broke down from the fatigues of the march, and had to quit the army.

If it was for experience, we certainly got it, and it gave us something to talk about for some years; and many a lurid yarn, spun for the edification of the youngster just escaped from West Point, began "When we were marching from Texas to Dakota —."

That the march resulted in any practical good is difficult to see. It was a heavy expense to the Government, a heavy expense to the officers and married soldiers, some of whom had to leave their families for months in Texas, before they could save enough money to bring them North; it wore out the patience of all; it produced no decided impression on the regiment, save of relief when it was over.

The conduct of officers and men was admirable. The good humor under adverse circumstances was remarkable; and while some had their nerves strained to the breaking point, and one or two literally fell out of the saddle and had to be retired, all tried to make the best of it.

One hesitates to criticise a brother officer who is no longer in harness, or this more or less critical account might have been made much more pointed. To err is human, and no doubt if those high in authority had had to do it over again, matters would have been different.

This paper cannot be closed without expressing the opinion that the commanding officer of the regiment did the best he could under adverse circumstances. His kindness, cordiality, unvarying good nature, and the encouragement he constantly held out, certainly helped to make matters easier than they otherwise would have been.

Of those who made part, or all, of the march, only five officers now are in the regiment: Captains Slocum, Flynn, Duff, Sayre and Evans, and eight enlisted men. Others have, by promotion, been transferred to other regiments; some have been laid on the shelf to rust, while to others have come the last bugle call; "taps" have mournfully wailed over the soldierly forms of Mizner, Bernard, Morris,

Weeks, Sprole and Williams, who have all gone to report to "The Great Commander."

The Spanish War, service in Cuba and the Philippines, have given the loungers in the Officers' Club other subjects to discuss, and the great march of the Eighth Cavalry in 1888 has been relegated to the official records, and, perhaps, is only remembered often by the few still living, who have hung up the saber and the spurs, and doffed the uniform for sober civilian attire, but who, all the same, when the army paper comes, turn first of all to the column showing the changes in "The Old Regiment." There their hearts still are; there memory loves to linger; and they fondly hope that the comrades of olden days still remember them.

## THE FIRST ACT OF THE LAST SIOUX CAMPAIGN.

BY CAPTAIN PETER E. TRAUB, THIRTEENTH CAVALRY.

THERE is a little bit of unwritten history that may well serve as a prelude to the capture and death of Sitting Bull. This prelude we shall name "Buffalo Bill's unsuccessful attempt to arrest Sitting Bull."

In the fall of 1890, it was the design of the division commander, Major General Nelson A. Miles, to anticipate the movements of the hostile Indians, and arrest or overpower them in detail before they had time to concentrate in one large body. In pursuance of this design, it was deemed advisable to secure, if possible, the principal leaders and organizers, namely, Sitting Bull, Hump, Big Foot, Short Bull, Kicking Bear, and others, located on the various Sioux reservations, and remove them for a time from that country.

On November 25, 1890, General Miles gave to William F. Cody authority to proceed to Standing Rock Agency, and to induce Sitting Bull to come with him, making such terms as he (Cody) might deem necessary. If unsuccessful in this, Cody was authorized to arrest Bull quietly, and remove him quickly from his camp on Grand River to the nearest military station, Fort Yates. In his report of the affair General Miles says: "He proceeded to Fort Yates, on the Standing Rock Reservation, and received from Lieutenant Colonel Drum the necessary assistance, but his mission was either suspected or made known to the friends of Sitting Bull, who deceived him (Cody) as to Sitting Bull's whereabouts."

Let us see the why and wherefore of Buffalo Bill's failure.

In November, 1890, General Ruger was ordered by the President to make a personal investigation of the actual condition of things among the Sioux. While at Standing Rock

Agency he was informed by Indian Agent James McLaughlin that it was practicable and advisable to have the actual arrest of Sitting Bull and other disaffected leaders on that reservation made by the Indian police, both for the certainty of their capture, and for the beneficial effects that would result in strengthening the authority of the agent and establishing the proper position of the Indian police. The Indian police might possibly make the capture without bloodshed or much excitement among the Indians. Sitting Bull's men were, moreover, constantly hanging about the agency, ostensibly to have wagons repaired or for some other purpose, but really to keep him informed. This, in connection with the fact that Sitting Bull lived forty miles from the post, and that an Indian on a fleet horse would reach him before a troop of cavalry could possibly get there, decided the authorities in favor of having the actual arrest made by the Indian police.

While Colonel Drum, commanding Fort Yates at Standing Rock, and Agent McLaughlin were making plans for the capture of Sitting Bull, and perfecting the details for carrying them into execution the moment the orders came, William F. Cody, commonly known as Buffalo Bill, appeared at Fort Yates with the authority of the division commander to make the attempt to bring in Sitting Bull, either peaceably or by force, and for this purpose the commanding officer was directed to furnish transportation and a few trusty men.

This was on November 27th; it produced consternation on the part of Drum and McLaughlin. The probability was much against the success of this expedition. Failure meant the escape of Sitting Bull and his following; their flight to Pine Ridge and the presence of the leader of the Sioux malcontents amongst the disaffected element in the Bad Lands along White River; the beginning of actual hostilities before the troops were in position around Pine Ridge; the probable destruction of property, looting of homes of settlers, and perhaps all the attendant horrors of Indian warfare—murder, rapine and mutilation. But Drum and McLaughlin were the right men in the right place. The former at once telegraphed the gravity of the situation to General Ruger,

desiring, above all, to know whether the order was by proper authority. General Ruger was very much surprised, as it was the first he had heard of the subject, the orders to Cody never having been transmitted to him. He at once telegraphed to Washington, through proper military channels, throwing the great weight of his experience and highly respected opinion against any such attempt at that time. McLaughlin telegraphed to the Secretary of the Interior in the most emphatic terms, and we will leave their telegrams speeding towards Washington, and return to Fort Yates.

By hook or by crook Buffalo Bill must not be permitted to start on his errand. He must be detained until replies come back to McLaughlin's and Drum's telegrams. Stratagem, trickery, if you please, had to be resorted to, but the end justified the means. Bill was induced by the hospitality of the officers to stay at Fort Yates all that day; but great was everybody's surprise to see him emerge from his host's quarters next morning smiling and happy, asking for his transportation, all ready for the start to Sitting Bull's camp. He could not be further dissuaded, and so set out for Grand River, the home of Sitting Bull, forty miles away.

This aspect of the case had been conceived of by both Drum and McLaughlin, and, as a last resort, they had thought of a device that acted like a charm. Its development will be seen as the story progresses. Bill proceeded to Oak Creek, about twenty miles. Here coming along the road toward the agency, he met Louis Primeau, an Indian scout and interpreter at Standing Rock Agency, upon whom McLaughlin had counted in thwarting Buffalo Bill's attempt. Primeau and Bill were well acquainted, and the former was questioned as to Sitting Bull's camp and his whereabouts. Primeau replied that Bull had had a dance Friday night, and had said he intended going to Standing Rock that very next day to see his old friend, Agent McLaughlin; that Buffalo Bill must have missed him on account of Bull's having taken the north road to the agency instead of the south one. To make doubly sure, he advised Bill to cut across country to the north road, and in case wagon tracks were seen going towards the agency, they were made by Bull, thither bound. This the party did,

and by proper manipulation wagon tracks were seen leading to Standing Rock, and Buffalo Bill turned back from Grand River, where Sitting Bull was probably at that moment haranguing his followers.

In the meantime, Colonel Drum had been very anxiously awaiting orders from superior authority. He kept Indian couriers at the adjutant's office, ready to leave at a moment's notice to overtake Cody. The message finally came, and that there should be no mistake, Indian couriers were sent over both the north and south roads; but it so happened that while they were passing in the vicinity of Oak Creek, Buffalo Bill was cutting across country between the two roads so as to strike the north road. The Indian scouts, therefore, on both roads missed him, and they went on towards Sitting Bull's camp with great care, and found everything quiet, Sitting Bull there, and no Cody on either road; and those scouts wondered.

Colonel Drum was a little alarmed at not hearing from the scouts by evening, and sent out two more on each road with copies of the President's dispatch; for it appears that the Secretary of the Interior and the Secretary of War went to Mr. Harrison in the middle of the night, and, with his own hand, the President wrote the dispatch that William F. Cody, known as Buffalo Bill, should not attempt the arrest of Sitting Bull, or any other Indian whatsoever, and that he should leave the Indian reservation at once. The second courier on the north road found Cody in camp, about five miles out from Fort Yates. The message was delivered, and Cody wrote in pencil the following:

"The President's orders have been received and will be obeyed. I leave to-night.

(Signed) "WILLIAM F. CODY."

The next morning (November 30th) at 9 o'clock he left for Mandan. Colonel Drum and Mr. McLaughlin had thus, by foresight, ingenuity and prudence, avoided the danger of the possibility of an unsuccessful attempt to capture the wily chieftain, Sitting Bull, who was so soon destined to pitch his lodge in the happy hunting grounds.

## CAPTURE AND DEATH OF SITTING BULL.

Sitting Bull was the acknowledged leader of the hostile element when the Sioux were at war. In order to remove him from the scene of trouble, orders were given on December 10th by General Miles, through General Ruger, to Colonel William F. Drum, commanding at Fort Yates: "Make it your special duty to secure the person of Sitting Bull. Call on the agent to coöperate and render such assistance as will best promote the purpose in view."

For reasons before stated, it was decided to make the arrest by Indian police, these to be supported by troops with orders to prevent a rescue, and, if necessary, protect the police. December 19th or 20th was agreed upon as the day to make the attempt, for then most of the Indians would be at the Agency for the issue of rations, and it was presumed that Sitting Bull would not come to the Agency, as he had not been there on the preceding ration day, but would remain at his home on Grand River. However, trustworthy information was received on the evening of Sunday, December 14th, that Sitting Bull was preparing to leave the reservation to join the hostiles at Pine Ridge, and it became necessary that there should be no delay in making the arrest. The number of Indian police about Bull's camp had been materially increased, under pretence of getting out logs for a building on Oak Creek, but in reality to watch his movements, and to become so acquainted with his camp, his house, and the surroundings, that even in the middle of the night they could effect his capture and removal.

Everything being ready, as soon as it was dark, orders written in Sioux and English were sent by two reliable Indians, to be read to Bull Head, the lieutenant of police, by an agency school teacher in that neighborhood. The order specified that Sitting Bull was to be arrested before daylight on the morning of the 15th, and brought to the agency, and that troops would be within reach in case a rescue was attempted. Later in the evening, orders were issued for Troops F (Slocum) and G (Crowder), Eighth Cavalry, six officers and a hundred enlisted men, Captain Fechét, Eighth

Cavalry, commanding, to march at 12 o'clock that night in the direction of Sitting Bull's settlement, for the purpose of preventing rescue, and, if necessary, to assist the police. It was the understanding that the police would send a courier to Oak Creek to inform the troops of the situation of affairs as soon as the arrest was made.

Although entrusted to Indians, all the details were perfectly executed. Up to 2 A. M. the 15th, a "ghost dance" and feast had been in progress at Sitting Bull's camp, and being tired out, the usual sentries around Sitting Bull's shack had fallen asleep. Not until the Indian lieutenant of police, Bull Head, placed his hand on the sleeping chief's shoulder at 5:30 A. M., had the latter any idea of going to the agency. He at once arose and remonstrated with the police. There was a slight delay in giving him time to dress. Sitting Bull's wives were quartered in a separate lodge, but in his own shack there slept Crow Foot, a deaf and dumb son of the old chief; between these two there existed the greatest intimacy. When the boy saw what was happening, he strained to the utmost the flaccid muscles of his throat and larynx, causing that unearthly sound, not loud yet disturbing. It was frequently repeated before the police gagged him; but unfortunately it had been heard by Catch-the-Bear, who emerged from his tepee just as Sitting Bull was being led away captive between Lieutenant Bull Head and Sergeant Shave Head. Sitting Bull called upon his followers to rescue him from the police, saying that if the two principal men were killed the rest would run away. Thereupon Catch-the-Bear fired, hitting and breaking Lieutenant Bull Head's thigh bone. As he was falling to the ground, Bull Head placed his pistol against Sitting Bull's side and fired, killing him. At least seventy-five warriors then attacked the forty Indian police, who, however, got possession of the shack and stable adjoining. The fight was hot, and volunteers were called for to carry a report of the situation back to the approaching troops. Hawk Man offered to perform this perilous mission, and at the imminent risk of his life, he slipped through the encircling hostiles, and carried the

news to Fechét, whom he met some three miles from Grand River.

In addition to his two troops of cavalry, Fechét had a Hotchkiss and a Gatling gun, under charge of Lieutenant E. C. Brooks, Eighth Cavalry. Throwing out a line of skirmishers, he disposed his troops in column of fours, an interval of three hundred yards between heads of columns, artillery between the heads, and advanced to the bluffs about 1,500 yards from Sitting Bull's house. About nine hundred yards to his right front, on a knoll, was a party of about fifty Indians. Beyond the house in the brush were more Indians. Shots were being exchanged. Fechét directed the Hotchkiss to be fired into this brush.

The effect was electrical; Indians began to scamper from the brush and retire across the river; a white flag was displayed by the beleaguered police from Sitting Bull's shack. The Hotchkiss was next trained upon the group on the knoll, and they dispersed, fleeing up the river. F Troop dismounted, advanced in skirmish line to and beyond the house. Crowder, with G Troop, mounted, protected the right flank and followed the retiring Indians up Grand River for two miles, when he was recalled. The skirmish line went about 600 yards beyond the house, clearing the brush, and then returned, leaving pickets at the farthest points.

When the troops came up the Indian police filed out of the shacks and formed company front, and reported the absentees, four killed, two mortally wounded, one badly wounded; but there was sufficient evidence of the noble defense they had made. Eight dead hostiles, including Sitting Bull, three wounded, and two relations of Sitting Bull, prisoners.

Captain Fechét's orders were explicit and did not include a pursuit of Sitting Bull's band, which would have resulted in unnecessarily frightening peaceful Indians. Accordingly the command moved back to Oak Creek, and couriers and runners were sent in all directions reassuring the peaceably inclined and urging all others to remain on the reservation

and come in to the agency, as that was the only safe place for them.

Over 400 Sitting Bull Indians, men, women and children, fled south to the Cheyenne River reservation. Of these, 160 surrendered in a few days to Agent McLaughlin, at Standing Rock, and eighty-eight others, who had reached the Moreau River, returned and surrendered to him within two weeks. Of the remainder, twenty joined the hostiles at Pine Ridge, thirty-eight joined Big-Foot's band on Cheyenne River, and 166 surrendered to Captain Hirst and Lieutenant Hale at the mouth of Cherry Creek. Thus ended the first act of the campaign, and peace was restored on Standing Rock Reservation.

## THE SANTIAGO CAMPAIGN OF 1898.

BY LIEUTENANT COMMANDER W. L. RODGERS, U. S. NAVY.

[Lieutenant Commander Rodgers delivered a series of very interesting and instructive lectures to the classes at the Infantry and Cavalry School and Staff College on the "Influence of the Navy Upon Land Operations." The following is an extract from the last of these lectures. As it shows certain phases of the Santiago campaign not generally understood by the Army, it will be read with much interest by army officers, especially those who participated in the campaign.—EDITOR.]

WE now take up the campaign of Santiago in the Spanish War in 1898. This campaign is selected to contrast with the Mississippi campaign, for the reason that in the Spanish War the Army was strategically subordinate to the Navy, thus reversing the relations of the two services on the Mississippi.

### THE PLANS CONSIDERED BY THE ADMINISTRATION.

The declaration of war against Spain was made for the object of delivering Cuba from Spanish occupation, and Cuba was necessarily the principal theatre of operations. The Spanish army of occupation could be brought to terms either by starving it into surrender by a blockade of the island, which was already devastated and disordered, or a field army could be thrown into the island to attack the Spaniards.

The first plan was not seriously considered, not only because the U. S. Navy was not thought strong enough to surround the entire island with a close blockade, but also because the inhabitants of the island would suffer with the Spaniards.

The second plan was favorably viewed, and the administration wished to put 70,000 men ashore in Cuba near Havana to oppose the Spanish army in the western part of the

island, and it was expected that the operations of this army would be the principal feature of the war. As such an army did not exist at the outbreak of the war it was necessary to recruit and organize it.

Success, however, would strongly incline to that one of the two combatants who should preserve his communications with home. As Cuba is an island and the sea is the only means of communication, it was impossible for the United States to think of launching an army against the principal Spanish position about Havana until a decisive naval battle should enable the army to embark without any anxiety for the subsequent security of communications. Accordingly the news of the departure of Cervera's squadron for the West Indies was welcome to the administration, as it hastened the solution of the problem by bringing the Spanish fleet, an essential factor in the situation, within the theatre of operations.

Thus the administration's plan at the outbreak of war was to attack the Spanish army in Cuba as soon as the American army could be mobilized in adequate force. It was not expected that the navy's action upon communications would prove decisive by itself.

THE UNITED STATES GOVERNMENT ATTEMPTS TO CUT THE  
SPANISH LINE OF COMMUNICATION BY THE DE-  
STRUCTION OF THE SPANISH FLEET.

When reports reached Washington that Cervera had entered Santiago de Cuba it was the immediate wish of the Navy Department to verify the news, and then retain him under observation until a sufficient force could be assembled to destroy him. Although the defenses of Santiago were far from strong, yet the guns and mines offered proper support to each other, besides having the Spanish fleet in reserve, so that were the navy to attempt to force its way in alone it would very possibly lose a ship or two. In the threatening condition of the relations of the United States with continental Europe, it was impossible for the administration to contemplate with equanimity even the smallest

reduction in our naval force, and imperative orders were sent to Admiral Sampson not to take undue risks against forts.

For these reasons it was arranged by the War and Navy Departments, at the suggestion of the latter, that as soon as the navy should blockade the Spanish fleet, a sufficient force of troops should be sent to aid the navy in opening the harbor preliminary to attacking the Spanish fleet.

On the 27th of May the Navy Department informed the War Department that it expected soon to be able to call for the army to move. On May 29th a sufficient force arrived before Santiago to make the blockade effective, and the same day it verified the presence of the Spanish fleet within, and reported the facts to Washington by cable from Hayti. On May 31st General Shafter was directed to move his army corps to Santiago in the following terms:

" \* \* \* You are directed to take your command on transports, proceed under convoy of the navy to the vicinity of Santiago de Cuba, land your force at such place east or west of that point as your judgment may dictate, under the protection of the navy, and move it on to the high ground and bluffs overlooking the harbor or into the interior, as shall best enable you to capture or destroy the garrison there, and cover the navy as it sends its men in small boats to remove torpedoes, or with the aid of the navy capture or destroy the Spanish fleet, now reported to be in Santiago. \* \* You will coöperate most earnestly with the naval forces in every way, agreeing beforehand upon a code of signals. Communicate your instructions to Admiral Sampson and Commodore Schley."

If each clause in the first and principal sentence of this order is duly weighed, it becomes apparent that it was the intention of the War Department to prescribe a movement for the capture of the garrisons of the harbor forts for the purpose, as the order explains, of covering the navy in its work of clearing the channel by its small boats. As an omnibus clause, indicating the scope of the entire campaign, the sentence concludes with the general direction, "with the aid of the navy, capture or destroy the Spanish fleet." Unfortu-

nately there exists a verbal ambiguity in the construction of the sentence (very possibly due to a desire to facilitate the enciphering) and this ambiguity, if the clause referring to covering the small boats of the navy be not fully appreciated, might allow the recipient to regard as his objective the garrison of Santiago.

It is thus seen that the administration was not contemplating the military expedition to Santiago as a substitute for the great enterprise against Havana, which it had debated a month earlier. It was not even a diversion in favor of the Santiago campaign. On the contrary, the expedition to Santiago was intended as, and expected to be, solely an auxiliary to the naval campaign, which was seen to be a necessary preliminary to any field operations against Havana.

How correctly the administration viewed the situation, as one governed by the question of sea communication, is apparent when we recollect that the report of a Spanish squadron on the north coast delayed the departure of the expedition until it was shown to be unfounded. Nevertheless the administration did not look as deeply into the question of Spanish communications as did Admiral Sampson, who telegraphed to Washington on June 26th that, in his belief, success at Santiago would terminate the war.

#### THE GENERAL NAVAL SITUATION.

On June 1st the arrival of Admiral Sampson at Santiago made the blockade an effective one. At this time a reserve squadron was fitting out in Spain and news of its completion was daily expected. Owing to its central position with regard to the two theatres of war in the West Indies and the Philippines, it had a free choice of its field of operations, and at Washington it was believed to be sufficiently strong to turn the balance of strength in either field.

#### PRELIMINARY NAVAL OPERATIONS.

As General Shafter's force was delayed at Tampa for lack of transportation so that Cervera was temporarily secure from attack, the Navy Department became very anxious to con-

tain his force in such a way that Admiral Sampson might be able to detach a division to act against the Spanish reserve squadron. The collier *Merrimac* was therefore sent into the channel and sunk there on the night of June 3d, in order to prevent the egress of Cervera's squadron. On June 6th, the forts at the harbor mouth were bombarded and silenced by the fleet, but suffered and inflicted no material damage. Although the forts were thus shown to be unable to oppose the fleet, the topography of the entrance was such that the heavy ships could not cover and protect the small craft from infantry fire should the latter be sent to clear the channel of mines and obstructions. In reporting the affair Admiral Sampson urged the immediate despatch of the troops, and, still erroneously believing that the *Merrimac* closed the channel, he suggested that delay in the arrival of the army would give the Spaniards an opportunity of removing the ships' guns to add to the land defenses, and stated that forty-eight hours after the arrival of troops the city and fleet would be captured.

#### THE SEIZURE OF A NAVAL BASE.

On June 10th the lower part of Guantanamo Bay was occupied by the fleet as a base for carrying on the blockade of Santiago, and a battalion of marines was landed to secure the ships from annoyance by the enemy on shore.

#### ARRIVAL OF THE U. S. ARMY. THE INTENTION OF THE COMMANDING GENERAL.

On June 16th the forts at Santiago were bombarded again and readily silenced. On June 20th the army arrived off Santiago, and after consultation between General Shafter, Admiral Sampson and the commander of the Cuban irregular troops, it was agreed that the army assisted by naval boats should land about eighteen miles east of the harbor and march to attack the forts at the harbor mouth entrance; and that to facilitate the landing, feints should be made both east and west of the entrance, and that the navy should shell the landing place in order to drive away any possible

opposition. The 21st was occupied in arranging details and issuing necessary orders. On the 22d the disembarkation began. On this day General Shafter wrote to Admiral Sampson, saying he would advance on Santiago as soon as he could, and requested Admiral Sampson "to keep in touch during the advance and be prepared to receive any message I may wish to transmit from along the bluff or any of the small towns, and to render any assistance necessary," thus showing his intention of attacking the harbor forts. About 6,000 men were landed on the 22d, and a strong force was sent to the west and seized a second landing place about eight miles down the beach, where troops and stores were landed on the 23d. About 6,000 more troops were landed this day, and all the troops, 16,000, were on shore on the 24th; but it was very difficult to establish a reserve of stores, as landing on an open beach is not easy.

#### THE ARMY MOVES CONTRARY TO THE GENERAL'S INTENTION.

The orders for the 24th of June contemplated the retention of a position near the landing place at Siboney until a sufficient reserve of stores had been accumulated on the beach; but General Shafter's headquarters remaining on board ship, the senior officer on shore, upon his own responsibility, directed an advance towards the rear of Santiago, and committed the army to a plan of operations which the Commanding General had not thought of. Not only did this movement forsake the key of the military position and throw away naval coöperation, but it entailed great difficulties in supply, owing to the expedition's lack of transport and to the bad roads, difficulties which would have been avoided had the army remained near the beach.

Under these circumstances the navy could do no more than maintain a close blockade and see that during operations thus prolonged the army should not suffer by having its store ships driven away.

On June 28th General Shafter learned of the advance of Spanish reinforcement marching from the west, and on June 29th he moved his headquarters on shore and arrived at the

fort the following day. On June 30th General Shafter notified Admiral Sampson that he would attack the city the next day, and that he would make a demonstration with a regiment against Aguadores, three miles east of the Morro, and requested the Admiral to support this demonstration in order to divert the defense before the city. Here we see that the movement along the beach upon the harbor forts, which the administration had contemplated as the principal one in front of Santiago, was reduced to the rôle of a simple demonstration, and that the major and minor operations had exchanged parts in the mind of the Commanding General. The navy carried out its share in this demonstration, as requested, on July 1st and on the following day also; but, although the ships present repeatedly assured the coöperating brigade that an advance would find the enemy's position abandoned, yet no movement was made to take possession, and a very promising opportunity was completely lost. On July 1st the American troops made a general attack on the outer works of the Spanish position outside of the city which was successful and was continued the next day; so that by the 3d of July the investment was complete on the north and east sides of the city. Nevertheless, in spite of his success, the General informed Washington that he thought of falling back from the position he had just won, owing to difficulties in supplying his troops from Siboney.

THE PROPER ROLE OF THE ARMY WITH RELATION TO THE  
NAVY AND THE CAMPAIGN IS LOST SIGHT OF.

On July 2d a very interesting correspondence occurred between Shafter and Sampson. Shafter first telegraphed to Sampson:

"July 2d. Terrible fight yesterday, but my line is now strongly entrenched about three-quarters of a mile from town. I urge you to make effort immediately to force the entrance to avoid future losses among my men, which are already very heavy. You can operate with less loss of life than I can. Please telephone answer.

"W. R. SHAFTER,  
*"Major General."*

The following reply was telephoned by Sampson's flag lieutenant:

"Admiral Sampson has this morning bombarded forts at entrance of Santiago and also Punta Gorda battery inside. Do you wish further firing on his part? \* \* \* Impossible to force entrance until we can clear channel of mines, a work of some time after forts are taken possession of by your troops. Nothing in this direction accomplished yesterday by the advance on Aguadores."

Shafter replied as follows:

"It is impossible for me to say when I can take batteries at entrance to harbor. If they are as difficult to take as those we have been pitted against, it will be some time and a great loss of life. I am at loss to see why the navy cannot work under a destructive fire as well as the army. My loss yesterday was over 500 men. By all means keep up fire on everything in sight of you until demolished. I expect, however, in time, and sufficient men, to capture the forts along the bay." "SHAFTER."

TO PRESERVE HARMONY WITH THE GENERAL, THE ADMIRAL OFFERS TO SACRIFICE THE PROPER PRINCIPLE AND RISK THE COMMAND OF THE SEA.

To this Sampson replied in a letter from which the following extract is made:

"Our trouble from the first has been that the channel to the harbor is well strewn with observation mines, which would certainly result in the sinking of one or more ships if we attempted to enter the harbor; and by the sinking of a ship the object of the attempt to enter the harbor would be defeated by the preventing of further progress on our part. It was my hope that an attack on your part of these shore batteries would leave us at liberty to drag the channel for torpedoes. If it is your earnest desire that we should force our entrance I will at once prepare to undertake it. I think, however, that our position and yours would be made more difficult if, as is possible, we fail in our attempt. We have in our outfit at Guantanamo forty countermining mines which I will bring here with as little delay as possible, and if we can succeed in freeing the entrance of mines by their

use, I will enter the harbor. This work which is unfamiliar to us will require considerable time. It is not so much the loss of men as it is the loss of ships which has until now deterred me from making a direct attack upon the ships within the port.

"W. T. SAMPSON."

Thus we see that the Commanding General, having allowed the act of a subordinate contrary to positive orders to commit the army to a difficult line of operation, ill suited to the early attainment of the object of the campaign, and having met with more difficulties in his operations than he had previously expected, and foreseeing others to come, then called upon the navy to save him from the consequences of his act by doing the very thing to prevent which the army had been sent out. General Shafter shows that he regarded the problem before him and the Admiral as simply a question as to whether the additional loss of life necessary to conclude the campaign, should be made to fall upon the army or the navy, and, as the army had lost 500 men, he intimated it was now the turn of the navy to suffer an equal loss before the army should be expected again to exert itself.

Really the situation was very different. Every commander-in-chief afloat or ashore must consider the political situation of the country as controlling the military action, and in modern times the telegraph to headquarters nearly always confers the means of executing this duty in a way satisfactory to the administration. In the present case it was a matter of notoriety that continental Europe was unfriendly towards the United States, and the administration feared that the loss of a single United States battleship, without corresponding loss to the Spanish fleet, might serve to crystallize a coalition against the United States which would be more disastrous than any loss of life, either in army or navy, which reasonably could be expected in front of Santiago. Moreover, should the United States lose a ship in the channel while forcing its way in, the channel might be obstructed so that the fleet would be divided into two parts, the one inside too weak to cope with Cervera's force, and the other unequal to the Spanish reserve squadron. In this case the transport fleet of the U. S. Army would be very vulnerable,

and an attack on it would cause the force in front of Santiago to starve as the reserve of supplies on shore was too small.

THE SORTIE OF THE SPANISH FLEET SAVES THE AMERICAN FLEET FROM ERROR.

A personal interview was arranged between the two commanders-in-chief to reconcile their views, but before it could take place the Spanish fleet came out and was destroyed on July 3d. On the same day the Spanish reinforcing column entered Santiago. On July 4th General Shafter sent word to the city of the loss of the fleet and demanded its surrender.

ATTEMPT OF THE GENERAL TO PERSUADE THE ADMINISTRATION TO RISK THE COMMAND OF THE SEA.

On the same day he renewed his request to the Admiral to have ships force the entrance, and sent the same request to Washington, asking for 15,000 troops additional in case the navy should not enter. He failed to see that, although the capture of the city and garrison was now the sole object of continuing the campaign, owing to the elimination of the Spanish fleet, yet this did not affect the military situation at Santiago, whose key remained, as before, on the hills at the harbor mouth, where the navy could offer tactical support without unduly risking the command of the sea. Not only had sickness made its appearance in the army, but the bad season was approaching, and passing supplies over a surf-beaten beach was a task of difficulty. Even then, had the detachment at Aguadores been sent against the harbor forts, supported by the fleet, the clearing of the channel would have enabled the naval guns to complete the investment of the city to the west; would have brought the garrison under the heavy guns of the fleet, and would have transferred the base from the uncertainties and difficulties of an open sea beach to the security of a fine harbor, besides avoiding most of the difficulties of forwarding supplies from the base.

The General telegraphed to Washington on July 5th: "The only safe and speedy way is through the bay; am now in position to do my part." He had forgotten what he had acknowledged to Admiral Sampson before landing, that the key of the situation was the harbor forts. The President ordered a conference between the Admiral and General, to agree upon a joint plan.

THE NAVY AGREES TO UNDERTAKE CAPTURE OF THE HARBOR FORTS BUT WILL RISK ONLY SMALL SHIPS.

On July 6th, they decided that three days' truce should be given to the Spaniards to deliberate in regard to surrender, after which, in case of refusal, the navy should bombard the city from the sea. Should this prove indecisive, the navy would then send one thousand marines with some Cubans to assault the Socapa batteries, after which some of the smaller ships of the squadron would try to enter (after countermining). That is to say, it was now agreed that the navy should undertake the land assault upon the forts, while the army was to retain the Spanish force within the city. That the navy now felt able to assume this task was due to its recent success against Cervera's squadron, and to the unprepared condition of Camara's squadron in Spain, which rendered a surprise by the latter impossible.

SURRENDER OF SANTIAGO. IT INVOLVES ALL THE TROOPS OF THE DISTRICT.

Firing had ceased on July 4th, and negotiations for surrender continued until the afternoon of the 10th, when the artillery of both sides opened and the ships outside added a long-range fire against the city. On July 11th the bombardment was renewed afloat and ashore, and the investment of the city was made continuous. In the afternoon firing ceased for the last time. Negotiations for surrender were resumed until the 16th, when the surrender was completed, to include all Spanish troops in the eastern extremity of the island.

This wide-reaching surrender was the direct result of the destruction of the Spanish fleet; for the controlling element

in the military situation in the opposing lines and, indeed, throughout the province, was the question of communications and supplies. The blockade was starving the Spanish army, and after the Spanish fleet was destroyed there was no hope of raising the blockade, so Santiago was ready to surrender. In fact, the Spanish government soon perceived its inability to hold the rest of Cuba and grasped the lesson sooner than did our own, although Sampson had early perceived that success at Santiago probably would terminate the war. Thus 150,000 Spanish regular troops were forced to evacuate Cuba without having seen an enemy, because the hostile navy operated successfully on their communications.

#### THE MOVEMENT ON PORTO RICO.

The movement on Porto Rico was another blow at Havana, as it deprived Cuba of a necessary intermediate base on the route to Spain; but the destruction of the Spanish fleet so completely interrupted communications that the attack on Porto Rico was superfluous, and did not hasten the conclusion of peace, but merely served to throw that island into United States possession when the peace was signed.

#### REVIEW OF THE CAMPAIGN.

In this campaign it is a noteworthy fact that the administration proposed to itself a military campaign against the principal Spanish army, but it did not realize the efficacy of the preliminary measure which it undertook in order to secure the command of the sea. In consequence it was surprised when that step proved sufficient to terminate the war.

The principal movement of the army of the United States in this campaign was deferred until its sea communication should be assured through the destruction of the Spanish fleet. The more active part of the campaign fell to the share of a large detachment of the army operating eccentrically in a region outside of the intended main theatre, while in spite of its strategic predominance the navy played a part tactically secondary, except at the instant of the sortie of the Spanish fleet.

The complete success attending the movement against the Spanish communications was because the local population was not the object of attack.

It was not the object of the United States to conquer and overrun a hostile territory. On the contrary, its desire was to expel a hostile force from friendly territory. It was unnecessary to seek out the main Spanish army, for this end could most readily be accomplished by directing the navy against the communications of the hostile force. To hold these communications securely it was necessary to defeat the Spanish fleet, and the navy called for the assistance of the army in getting at it. Therefore, in this campaign, the army was strategically subordinate to the navy.

The army was sent to act as an auxiliary to the navy in a naval campaign. The Commanding General misunderstood this point to such an extent that he thought the military operations were the principal ones, and called on the navy to sacrifice itself and risk the success of the campaign to further his own immediate object. Had the forts at the harbor mouth been taken on June 24th or 25th, as probably they might have been, and the Spanish fleet destroyed a day or two later, it is possible that the Spanish garrison of Santiago would have marched into the interior, and the loss of life before Santiago would have been avoided. In this case the Porto Rican campaign would have given the military blow which Spanish honor required before evacuating Cuba, and the war would have ended no later than it actually did. But Cuba was untenable after July 3d, when the Spanish fleet was destroyed.

It is further to be noted that the navy captured and held the advanced base of operations necessary to it without calling on the army for assistance, employing the Marine Corps for the purpose.

## GENERAL CONCLUSIONS.

*Strategic Principle.*

If now we compare the influence of the Navy upon military operations in the cases we have cited, we may draw the following conclusions applicable in all periods. The strategic principle is invariable that the fleet's primary duty is to cover the communications of its own army and embarrass or destroy those of the enemy.

This strategic objective it accomplishes in one way, by destroying the commercial and naval shipping of the enemy. Any diversion of the naval strength from this purpose is perilous.

When pressure on the sea communications will effect the purpose of the operations, the army should act in support of the navy and allow the latter to take the principal share of the work

*Duty of the Navy Towards the Army.*

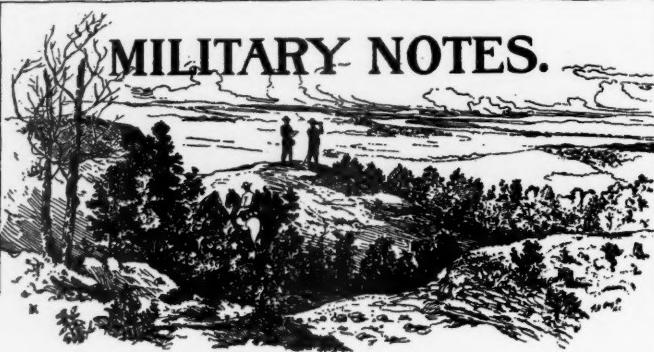
Tactically the navy may and should support the army with its peculiar combatant strength when it is in sufficient force not to risk disaster to the communications by losses incurred in aiding the army's battle.

When an army is in retreat the navy may support and aid it in battle to a degree not permissible in the case of an advancing army, since the immediate safety of the army is then more pressing than the question of its communications.

*Duty of the Army Towards the Navy.*

On the other hand, it is the duty of the army towards the navy to provide and hold such naval bases as are essential for the performance of naval work upon the lines of communication. Should a hostile fleet take refuge in a fortified port, the army must undertake the principal part in driving it out, or capturing it, and must expect to see the navy refuse to risk itself in supporting the army in attacking the main defenses of the place.

## MILITARY NOTES.



### THE WEBLEY-FOSBERY AUTOMATIC REVOLVER.

BY MAJOR A. G. HAMMOND, THIRD CAVALRY.

REFERRING to the article by Captain Vidmer, Eleventh Cavalry, in the January number of the JOURNAL, on the Webley-Fosbery automatic revolver, I would like to say that I have made quite a study of this revolver, and believe it will prove a useful and durable arm. Like Captain Vidmer, I do not propose to bring up a discussion of the merits of a large caliber pistol, for I believe we are almost, if not quite, a unit on that subject.

Through the kindness of Mr. Joseph Devlin, the Exposition representative of the manufacturers, we were enabled to have a thorough trial of the pistol, he having sent to England for a supply of "cordite" ammunition for it.

I personally fired a large number of rounds with this pistol. The targets made were very good, and during the trial no defect in the mechanism was made apparent. There is none of the "throw-up" experienced with our 45 revolver, as formerly used, and the accuracy of the target was, so far as I observed, dependent on the individual skill of the operator.

All revolvers, without doubt, have a certain amount of loss of gas, owing to the almost inappreciable space between the cylinder and the barrel; but why should we desire a revolver whose killing range is beyond seventy-five yards? If it has sufficient stopping shock within that distance, it appears to me to be sufficient.

Should there prove to be sufficient use of the pistol in this country, it is practically sure that our ammunition manufacturers will make the necessary ammunition for it, so as to render it unnecessary for us to purchase the ammunition abroad.

With a supply of clips, ready loaded, and carried in either the pockets of the service blouse or in a belt with pockets, the revolver can be reloaded in an almost inappreciable time, and it is quite possible that some lives that otherwise might be lost, could be saved at the expense of the other man's.

During our trials no weakness was developed, though the tests were as thorough as the brief time permitted. The "grip" of the pistol is good and fits the hand well.

For those, if any there be, who desire a smaller caliber, there is also manufactured a .38, the chamber of which holds eight cartridges.

I have so much faith in this revolver that I have already placed an order for one with the manufacturers.

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BY MAJOR H. L. RIPLEY, EIGHTH CAVALRY.

When the description of the Webley-Fosbery automatic revolver first came to my notice I was very favorably impressed with it on account of its apparent simplicity, its strength, and the absence of that delicate mechanism which appears in most of the prominent automatic pistols of the day.

It is not a new revolver. It has been for several years before the English people, but it is only comparatively lately that it has been perfected by its makers.

I requested Warnock & Company, who handle it in this country, to send me one for a closer examination and trial. They sent me one of 45 caliber, and 100 rounds of cartridges charged with cordite and made for the revolver.

Closer examination of the revolver itself still further impressed me with its adaptability to our service. I then took it to the range and fired it. Here, as an automatic revolver, it was a complete failure. Not a single shot fired carried the upper portion back, thus revolving the cylinder and cocking it. Other officers of my regiment—excellent pistol shots—were also present and fired it, but with the same result. It was simply a single shot pistol, and a poor one at that, as it took both hands to push the upper part back and thus revolve the cylinder and cock it after each shot.

Several times by working it back and forth by hand, the revolving stud traveled the same road, and the cylinder which was turned half-way to the new cartridge when the upper part was away back, was turned back again, when it went forward; thus presenting the fired shell a second time to the firing pin, which would cause a miss-fire.

I returned it to Warnock & Company, and have since been informed that it had been sold to another party, and no complaints had been received as to its working.

I am, however, by no means prepared to condemn this class of revolvers on account of my experience with the one I tried. I believed then, and I still believe, that something was wrong with the particular one I had. It required considerable strength when using both hands, to start the upper part back, more force than the recoil would produce, but once started, it went well enough.

As regards accuracy, I did not find it as accurate as our present 38 caliber service revolver, and it is much inferior in that respect to the officers' model Colt 38, or the officers' Smith & Wesson 38, which latter are most excellent shooting revolvers; but I prefer the Colt on account of its superior grip and front sight.

The Webley-Fosbery was advertised to use our service 45 ammunition, but it could not be used in the one I had. It was a trifle too large to go fully into the cylinder.

It is very desirable that any officers' pistol should use the service ammunition. That this one does not, is an objection, though not an insurmountable one. The revolver is well described by Captain Vidmer in his article in the January JOURNAL, though he omits to mention a little triangular device on each side in front of the cylinder, which enables it to be thrust home into the holster, without catching in the front of the cylinder as our service revolver does.

If the automatic mechanism always works as it is claimed it does, I believe it the best revolver yet offered for our service. It is simple, very strong, sufficiently accurate, not liable to get out of order in the hands of a recruit, and there is no question as to the stopping power of the .45 caliber. At the same time, as compared with our .38, it is heavy and feels clumsy at first.

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Is it, or will it ever be, safe to put any automatic pistol into the hands of the troopers? Most of us believe that it is not, and never will be. Fancy a charge and a melley in which a troop, armed with automatic pistols, has engaged. At the end of it, in the excitement and confusion, how many of the pistols will be dropped on the lanyard, or shoved into the holster, cocked and all ready to fire a hole through the trooper's thigh? Is there any doubt that some will, in every case?

Of a truth, the automatic pistol will never be of any use in our service except to officers, and even in their hands its advantages are doubtful. Accuracy and quick firing are its only advantages. Accuracy depends more on the hand than the pistol, and in self-defense it is the first shot which counts; and with no automatic pistol yet tried in our service, can the first shot be got off as quickly as it can with a double-action revolver.

As to a larger caliber for our pistols, it is high time that every officer of our service was making himself heard on this subject. So far not a single one with any practical experience who has been heard from, but condemns our small caliber.

Not one of us, when there is expectation of real danger, feels himself adequately armed if he carries a 38 caliber revolver. Whose fault is it that we are still equipped with this parlor pistol, in the face of all the reports that have been made against it? Let us get rid of it. The pages of the JOURNAL are open to all officers for the expression of their views; and if a whole JOURNAL, or several of them, should have to be given to this single subject, they will have served their purpose well, if they rid us of this faulty weapon. And it is not believed that the Ordnance Department will persist in equipping us with this pistol, if we all raise our voices loud enough against it.

EDITOR.

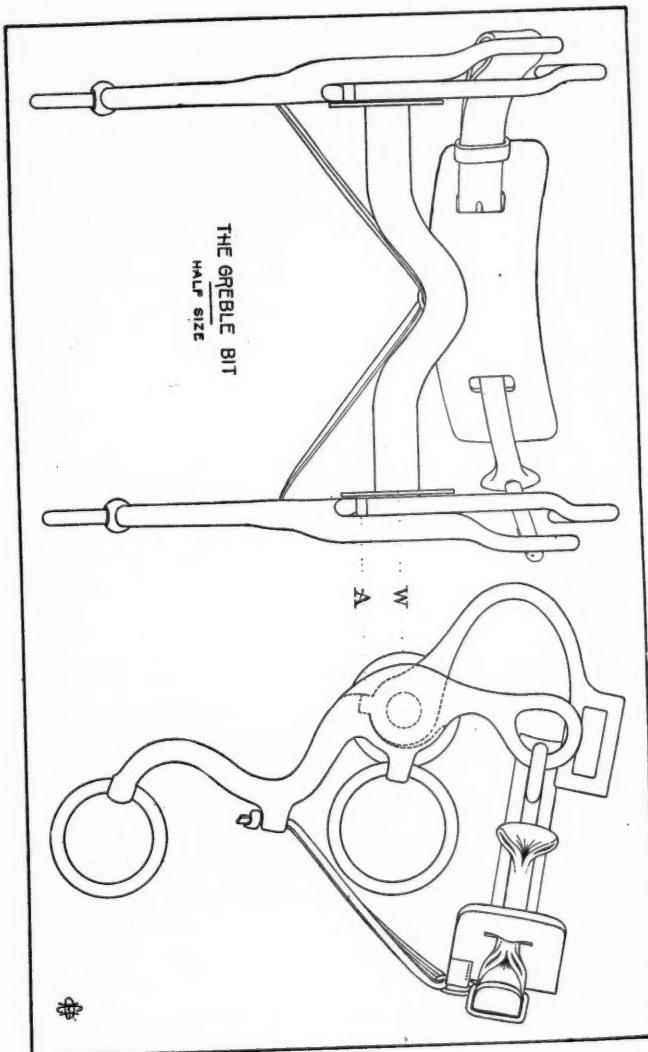
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#### THE GREBLE BIT.

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TURN back to Captain Koehler's concise article on cavalry bits, in the JOURNAL for July, 1903. He cites five serious defects in the issue bit, and introduces the Johnson bit, which most of us have since had an opportunity to test. While the Johnson to a great extent remedies the faults enumerated, it has itself, in the opinion of many officers, defects sufficient to debar it from adoption for field service. The brief comment of an old captain that "it is too —— much of a machine," seems to voice the general objection.

The Greble bit, here illustrated, differs from the Johnson and the Whitman in details, but not in principle. The essential difference is that the attachment is inside and not outside of the upper branch; but we have the same separate piece to be attached to the cheek-strap, and designed to prevent poll pressure, and the lug (A) to prevent upsetting. To correct other faults a disk or washer (W) is intended to prevent abrasion of the lips, and a thong is added to retain the curb-strap in the chin-groove; at least, it is assumed that such is its object. A thong similarly placed on the issue bit is frequently used to prevent upsetting, but in the Greble



model the lug (A) prevents this evil since the cheek-piece attachment has a rectangular slot.

Several of these bits have been tested at Fort Riley and the consensus of opinion, gathered unofficially, seems to be:

1st. The cheek-piece attachment obviates the use of the nose-band of the Johnson bridle, but, by comparison, there is a marked loss of rigidity.

2d. The attachment itself is too frail; it can easily be bent with the fingers, and when it is bent, the parts bind and the principle disappears.

3d. The washer (W) is a necessity in this model to prevent pinching the lips in the scissors of the upper branches; but in some cases the disk itself has caused injury. Moreover, since the attachment is theoretically stationary, it would seem that the washer should be fastened to the attachment, and not to the mouth-piece.

4th. The upper branch has none of the curvature seen in the Johnson model, and in consequence the curb-strap rises just as much as it does with the issue bit. The thong becomes slack as soon as the lower branch is pulled to the rear.

5th. Accumulation of dirt and rust in inaccessible but vital parts will be even more apt to occur in this model than in the Johnson.

In short, the Johnson is the better bit.

Major Greble has evidently devoted much time and thought to his subject, but the old problem of the practical field bit appears to be still unsolved.

In the remarks following Captain Koehler's article will be found the strongly favorable comments of the Fort Leavenworth officer who, in July, 1902, was testing the Johnson bit. Only yesterday this same officer stated: "The bit has worn out and gone all to pieces, and it was made stronger especially for me." This, after two and a half years of comparatively light service.

The conclusion cannot be avoided that bits of the Johnson and Greble pattern, ideal in theory, are of value in practice only on the gentleman's park horse.

The curb-strap, shown in the figure, stands, of course, on its own merits. It is considered faulty, in that the ends are

not symmetrical. The hook end is fragile; two of these hooks have broken, in one case, permitting a spirited horse to bolt with one of the best horsemen at this school (School of Application for Cavalry and Field Artillery).

G. H. C.

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### THE SERVICE BIT, CURB-STRAP, AND BRIDLE.

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BY CAPTAIN HERMAN A. SIEVERT, NINTH CAVALRY.

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THE subject of bridle bits is always an important and interesting topic with the horseman, and the ideas entertained by him in regard to the construction of a bit are as different and varied as the numerous varieties found on the market.

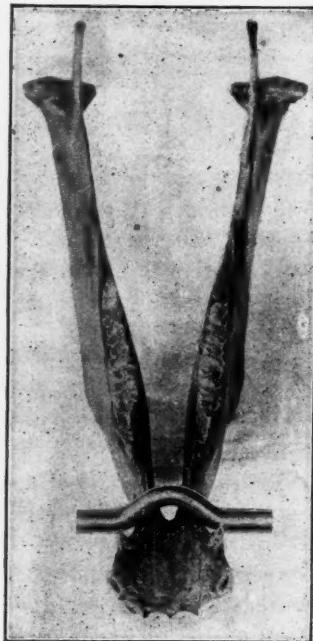
The kind of bit to be used is determined by the opinion of the owner or rider, certainly not by the obedient, adorable horse, who has had perpetrated upon him more instruments of torture than all other animals of his kingdom.

After carefully reading the criticisms invited by the JOURNAL OF THE U. S. CAVALRY ASSOCIATION on bits in general, and especially the present service bit, I endeavored to construct a bit that would overcome many of the objections noted in those criticisms, and I wish to state that I have been greatly assisted in my endeavors by the many valuable suggestions made by officers in reply to the JOURNAL'S invitation. Concerning the mouth-piece, I will first consider the port, its object, width and height.

The object of a port in a stiff mouth-piece is properly to proportion the amount of lever-action between the tongue and the bars, and to allow the tongue to have some blood circulation; a horse is then considered nicely bitted. Just what amount of blood circulation the tongue will have, depends upon its size and texture, and the particular shape and curves of the port.

Cut No. I. gives the mouth-piece of a *service bit* placed on the skeleton bars of a horse sixteen and one-half hands, at

seven years of age; the width of the tongue-channel is one and one-fourth inches, the height of the bars is one and eight-tenths inches, these measurements being taken opposite the chin-groove. It will be noticed that the port of the service bit, which is two and one-half inches at the door, and three-fourths inches high, falls entirely outside the bars of the jaw of this average mouth; and the straight portions of the mouth-piece do not operate on the bars as we have been taught to believe they should. Authors dealing with the subject of bits, generally agree in regard to the principles of the port and its objects.

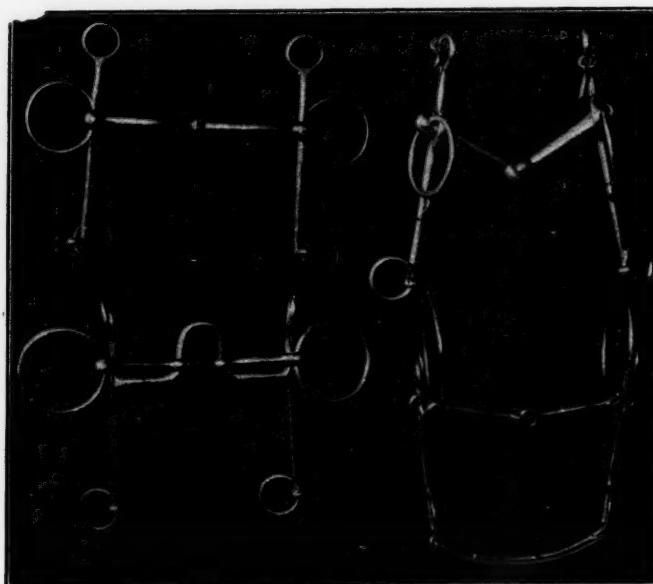


CUT I.

Our text-book on hippology, "Horses, Saddles and Bridles," by General Carter, treats of the port in a very thorough manner. The following is quoted from the above named authority, page 142: "The tongue-channel determines how much of the mouth-piece must be allowed for the width of the port of the curb-bit, the remainder being reserved for the action of the bars." Again, page 152: "It is necessary that the parts of the mouth-piece to act on the tongue and bars respectively should keep their places. This requires that the mouth-piece fit exactly the width of the mouth, and the width of the port be not greater than the width of the tongue-channel. If a mouth-piece with a port be too wide, a slight pull on one rein will suffice to displace it, so that the bar at that side gets either altogether under the port, in which case the pressure is thrown on the tongue, when the corner of the port will, by being pressed into it, cause great pain, and make the action of the bit very

irregular and unsatisfactory. If the port is wider than the tongue channel, a similar thing occurs; and if narrower it fails to admit the tongue."

One and one-third inches, according to the author, should be the maximum width of the port (this gives no margin, and no matter how correct the mouth-piece is in length, one corner of the port is ready to slip in the tongue-groove at the



CUT II.

first side pull the bit receives); however, the designers or constructors in the arsenal have followed the principles and objects of the port close enough to give us a service bit with a port two and one-half inches wide.

Let me ask the question, Who is at fault, the board of designers of the service bit, or the authors in their universally accepted deductions as to the objects and necessity for a port in the curb-bit? My opinion is that the service demanded a lever bit, and the designers having nothing to substitute for

the port, continued this relic of barbarism, and have given us a bit in which the port is the most suitable that could be devised; certainly far superior to a port having a width equal to or less than the lingual canal. The port of the service bit as shown in Cut No. I. works well down on the sides of the bars of the lower jaw, and the corners of the port being well rounded, the action is much less objectionable than with a port having the same width as the tongue-channel; in which case the corners could not be very much rounded.



CUT III.

each other; thus giving a bit similar but superior to the curb and bridoon.

Cuts II. and III. are the only bits on the market that approximate the above description.

#### WIDTH AND HEIGHT OF PORT.

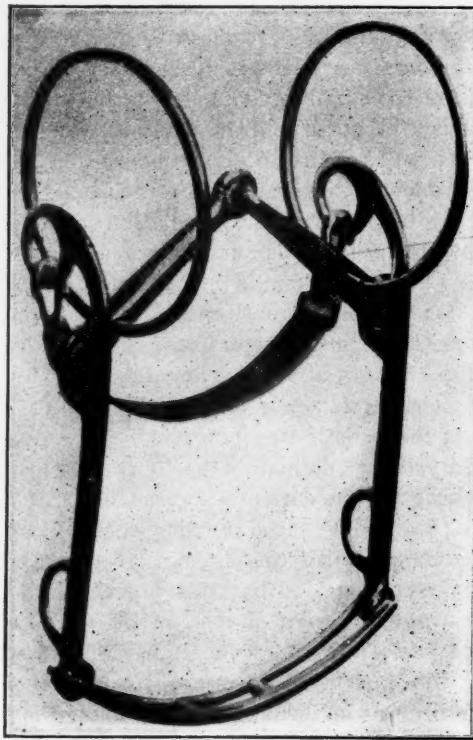
In considering the width of the port, it is, of course, necessary to know the width of the channel the port is to bridge; the average width of the channel for the tongue is found to be about one and one-fourth inches.

It may be said that the height of the port will depend upon how much tongue it is to receive and work upon; as the average width of the lingual canal is one and one-fourth inches, the bottom of the port should be a little narrower, say one inch, or better, seven-eighths of an inch. This will give three eighths of an inch play, and will help to prevent (if possible) the corners of the port from being pulled into the channel, and also from bruising the gums on the outside of the bars. A port seven-eighths of an inch wide at the door, if not too small for the tongue to enter comfortably, and cause the horse to draw back his tongue in a tiresome position, will require too much height. Any port that would meet one of these requisites in shape, would be at fault in every other particular, and as a matter of fact it (the port) is entirely inconsistent with good bitting.

Cut III. has the broken or hinged mouth-piece, generally known as a snaffle mouth piece, placed on the same skeleton bars; these snaffle sections are shown to make with each other an angle of about seventy degrees, which I have considered to be a safe angle in consideration of the pinching action on the bars of the mouth. This angle, however, can be made greater or smaller, by increasing or diminishing the openings in the ears of the branches. It is evident that the arch the mouth-piece sections make with each other increases in height with the amount of pressure or power applied to the reins; also, that this mouth-piece accommodates itself to the different shaped mouths, and to the volume and texture of tongue of the individual horse. Before concluding my remarks on the mouth-piece itself, I will add, that I appreciate the mildness of the snaffle section in training the young horse and its tendency to preserve a normal mouth in the trained and older animal; but I am convinced that the better education of the horse is accomplished by the use of the lever action in a bit, usually completed by the assistance of some form of curb-strap.

## CURB ACTION SEPARATELY CONSIDERED.

In the present service bit the length of the upper and lower sections of the branches being generally conceded to be of proper proportions, the shape of the branches should be determined by just what part of the mouth the lever-



CUT IV.

action of the bit should be applied to; the accepted place for this action is in the chin groove by the curb apparatus, and upon the bars of the lower jaw, opposite the chin groove, by the mouth-piece.

The shape of the branches of the present curb-bit is faulty for two reasons: First, the curb apparatus moves up

out of the chin groove; second, the curb apparatus pinches the corners of the horse's mouth. Both of these faults would be obviated by changing the shape of the upper portion of the branches in the service bit.

Cut IV. shows branches with proportions identical with those of the service bit, but with the upper parts of the



CUT V.

branches bent slightly rearwardly and down. It will be seen that it is absolutely impossible to pinch the corners of the mouth with this shaped branch, and that the curb strap has not the tendency to leave the chin groove.

#### THE CURB STRAP.

The curb strap should be light, strong, of a suitable length and texture, should conform to the shape of the chin groove, and should not stretch or shrink.

Cuts IV. and V. show such a curb strap. It is made of steel tape, having the ends bent back upon itself, and riveted to form loops; the rivets passing through the ends of a piece of stuffed leather, to serve as a cushion. It costs about fifteen cents, which includes a double detachable snap. These snaps can be made of different lengths, thus making the curb-strap adjustable. These various sized snaps are to be kept by troop commanders, and when the proper length curb strap is determined by an officer for a trooper's horse, it cannot be changed in length to suit the whim of the rider.

#### BRIDLES.

Cut V. shows a bridle having but two straps, five buckles, two keepers, and not a stitch of sewing in it. This bridle can be perfectly adjusted to suit the largest horse or the smallest pony.

The service bridle has several objectionable features that have occurred to me under varying circumstances; and while it does not require a vast amount of energy to criticise and find fault, yet this is usually overlooked, when one is candid and sincere enough not only to suggest something better, but also to construct and test a model that will eliminate the objectionable features in the article that he criticises, without introducing other or more objectionable features.

To start with, the brow-band of the service bridle is not adjustable in its length. It may, however, be moved up and down on the crown-piece; but there is no attachment to hold it in its proper place, and a horse with a small head will have the buckle of the cheek strap crowding the brow-band up against the base of the ear.

The bridle is decidedly weak in one place, namely, where the ends of the crown-piece (just below the rosettes) buckle into the cheek straps. The bridle is also faulty in that it has no considerable degree of adjustability; for instance, in attaching the watering bit to the present bridle on a horse with a small or medium head, the mouth-piece of the bit cannot be taken up far enough in the animal's mouth.

Cut V. shows a bridle that remedies these defects. The brow-band and throat-latch are one continuous strap, held by a flat buckle hidden by the rosette; and the brow-band can be readily lengthened, raised or lowered, to suit the particular shape of the animal's head.

The crown piece and cheek straps are one continuous strap of the same width (one inch) throughout its length; these two straps and five buckles form the bridle. It will be noticed that the bridle has not a stitch in it to weaken its structure, and while it has no weak link (so to speak) it is pleasing in appearance. The crown-piece of the service bridle being split at both ends from the rosette down, the rear portion forming part of the throat-latch, and the front portion part of the cheek-pieces, gives the bridle its weak link.

A strap is run between a small, strong metal keeper and the buckle of the cheek-piece, making the whole an excellent halter-bridle; and each trooper, with the assistance of a buckle and a strap, is at once his own saddler, as far as his bridle is concerned.

The third rein shown in Cut V. is detached from the bit and snapped into a ring in the halter-strap for the purpose of a halter-shank when such is necessary.

The following are some of the objects and principles of the bit shown in Cut IV :

*Why Does the Jointed Mouth-piece Give the Desired and Proper Fulcrum in Operating a Lever-action Bit?*

The desired fulcrum, for the reason that the mouth-piece accommodates itself to suit the volume and texture of the tongue, and the size of the bars for each individual mouth.

The proper fulcrum, for the reason that it positively assures the preponderance of pain on the bars of the lower jaw, and a minimum of pain in the chin groove. This is accomplished by the pinching effect of the snaffle sections in operating the lever-action, in addition to the pressure on the bars. Thus the animal will surrender to the pain, and

the head will follow the rider's hand; while, if a considerable amount of pain is produced by the curb strap, the head will naturally be pushed forward to avoid the pain, bolting, and a general misunderstanding between rider and horse will follow.

*Why Should the Mouth-piece Have a Universal Joint Connection With its Branches?*

This prevents the mouth-piece from being turned in the animal's mouth, eliminating possible injury to the bars; and it certainly gives more comfort to the animal.

It keeps the part arched over the tongue at all times, thus preventing it from pressing into that member. It prevents the animal from seizing a branch between his teeth. When the curb structure is not being operated, it swings loosely, both forward and laterally on its pivoted connection, from the perpendicular, and it is about as difficult for a horse to catch a branch as it is for a boy to grasp with his mouth an apple hung on a long string from the ceiling.

*Why Should the Branches be Curved Down and Rearwardly?*

This prevents the corners of the mouth from being pinched between curb-strap and mouth-piece.

It keeps the chin-strap in the chin-groove, and the pressure of the mouth-piece on that part of the bars opposite the chin-groove.

The ball and socket connection and the universal joint connection, as shown in Cut V., are used for the reason that they can be readily constructed to limit the angle made by the mouth-piece sections. From actual tests I have found a minimum of sixty-five or seventy degrees for the average size mouth to be a safe angle, and one that will not injure the bars by excessive pinching. The above described connections also prevent the upper portion of the branches from coming together too closely in operating the snaffle action.

The first named connection, that having the "universal joint," from its construction, prevents the horse from throwing the bit over.

*Why Are the Rings Used to Connect the Cheek Pieces of the Bridle?*

- 1st To protect the sides of the animal's face from being rubbed by the branches.
- 2d. To protect the horse's cheeks; the ring gives a construction that does not interfere with the curb action.
- 3d. To prevent a pull on the top of the head, and, also, prevent displacement of the mouth-piece when operating either the curb or snaffle actions.
- 4th. So that a running rein can be used in breaking a remount, or for martingale attachment, if desired.

*Why Is the Yoke Constructed With a Central Loop?*

To give a third rein attachment for operating the curb action by the trooper, and the off horse by the mounted artilleryman. It is expected that with this bridle the trooper will habitually ride on the snaffle, thus preserving a normal mouth even with a heavy-handed rider.

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## THE TRAINING OF CAVALRY HORSES.\*

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BY EDWARD L. ANDERSON, AUTHOR OF "MODERN HORSEMANSHIP."

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**G**ENERAL:—I accepted your invitation to address the officers of your command upon the subject of the "Training of Horses," with much pleasure; in the first place, because it was a high honor to appear before such an audience, and in the second place, because I had for many years taken a lively interest in our mounted service and hoped that good would follow such a scrutiny of the subject in hand. For, instead of delivering a lecture, I had proposed to myself, with your permission, to make a statement of the principles of the method to be recommended, and invite criticism and discussion from the gentlemen present. In

\* Extracts from a letter to the commandant of the Infantry and Cavalry School and Staff College.

such a course any errors that existed might be made apparent, and obscure points could be made clear.

Should you receive this letter, it will be because circumstances have prevented me from keeping my engagement during the time appointed, and I can only express my deep regret that such is the case.

I am sending you a summary of the points I had hoped to offer for consideration, and if you can make any use of this communication I shall be gratified.

Above all other horsemen the trooper should have the immediate, exact and unlimited control over the animal he rides, and every army should adopt some system which accomplishes this in the simplest manner. Some arrangement of Baucher's Method best answers these requirements, but Baucher's writings are too obscure for general use. Horses were trained, and sometimes well trained, before Baucher's day, but all such work was more or less tentative, and it remained for that master to formulate and explain all that was of value in the art, and to give undeviating rules that applied to every case.

That all modern methods of training of any value owe their existence to Baucher (a fact that is usually disputed by those authorities who desire to lay claim to originality) may be seen by comparing any work on the subject which has appeared since 1845 with those of an earlier date.

Stripped of its unnecessary and confusing refinements, Baucher's Method may be expressed in two brief paragraphs:

#### I.

The cultivation in the horse of those muscular actions that follow the applications of the hand and heel, until obedience to their demands becomes instinctive. The suppling consequent upon this work, annulling the active (or willful) and the passive (or physical) resistances and rigidities in all parts of the animal.

## II.

Collecting the weights and forces of the extremities (the forehand and the croup) to a point of union and balance under the rider, who disposes this center of gravity as the occasion requires, so that the animal moves in easy, cadenced and controlled actions, forward, to the rear, or to either side.

The results indicated in these two principles must always have been produced to a greater or lesser extent in every horse that had been made easy, safe and pleasant to ride; but horsemen did not understand the matter clearly, until Baucher's scientific explanation of the phenomenon. That is, previously to Baucher, training was an experiment in every case; afterwards it was a method.

Furthermore, Baucher explained that a great part of the education of the horse could be accomplished by the dismounted man in about one tenth of the time that would be required by the mounted man, by reason of the ability of the trainer to demand more readily a sure obedience from the animal so confined. Indeed, except for the few lessons which would be required to transfer the effects of the whip to the rider's heels, a horse might be thoroughly trained without ever having been mounted.

A satisfactory method having been selected, it should be of general application throughout the army, for that would secure a uniform and certain mode in place of irregular and questionable ways of handling horses. In spite of short enlistments, unsuitable bridles, and irregular instructions in horsemanship, the cavalry of the United States Army compares favorably with the mounted men of any country; but this is due to the zeal and abilities of its officers, and two, at least, of the three hindrances might readily be obviated to the advantage of the service. At present every troop commander teaches riding and training according to his own ideas; so that it may happen that no two units of a regiment would have, when mounted, the same uniformity, mobility, or effective force, every variety of seat and of handling the horse being possible. A settled method might be introduced without serious disturbance of existing conditions by the ap-

pointment to the Military Academy of an instructor familiar with the desired method, and by sending the graduating cadets who are to be commissioned in the mounted arms to one of the Service Colleges for one year's work in the care and training of horses.

The nearer we keep to the so-called thoroughbred and yet improve on it in springiness of action and in nimbleness (for by reason of its long stride the thoroughbred has some defects in its movements) the better horse shall we have for the cavalry, because the stamina and courage that will make even a dying effort, may give the great result that has been looked forward to by years of preparation. In the Napoleonic wars, the coarse animals ridden by the heavy cavalry sometimes became "dead-beat" in the charge, and could only be brought against the enemy in a walk; by which the effect was lost. It is questionable whether the time ever comes that a few strides in the gallop cannot be asked from a well-bred horse that is able to stand on its legs.

Whatever may have been its previous handling, every horse that is intended for cavalry service should be put through a like course of training; the length of time required for any stage of its education depending upon circumstances.

In America we do not make enough use of the *cavesson*, a head collar with a metal nose-band, by means of which the man has great control over the horse without necessarily inflicting pain on the animal. When the horse circles about the man at the end of the longe-line, and is brought to a halt at the trainer's demands, and made to change direction, and to do other things required of it, the animal is not only given a good form of exercise, but it is suppled throughout, and an amount of discipline is established that would surprise one who had never made use of this admirable instrument.

The fault in Baucher's writings, which renders them almost or quite useless to those who do not recognize it, is that he apparently intends that the training of a horse should begin with the bending lessons in the double-bridle. Everyone who has proceeded in such a manner must have invited failure, for the horse would always be "behind the hand,"

that is, the rider would find no tension upon the reins by which to direct the movements of the horse. *Riding is the production of impulses from the croup which are controlled and directed by the hand.* The hand must always find some slight opposition to the reins, or it will have no control over the horse. When a horse determines to rear, to shy or to commit any form of mutiny or mischief, it almost invariably "drops the bit" and gets behind the hand just before it endeavors to escape control.

When the horse is first mounted, it should be ridden in the snaffle until it will go forward under a steady but slight tension upon the reins, and has been taught to obey the heel indications, and to be fairly obedient to the bridle.

Then the animal should be put into the double-bridle and its education completed by carefully conducted lessons. It should be observed that no horse can be properly trained or ridden in the single-curb-bridle, and it is a matter of astonishment that this inadequate apparatus should be retained in our service. In every European army the curb-and-snaffle bridle is employed, and there are many reasons in its favor beyond the fact that both bits are required in properly training a horse.

Among many things that may be said in behalf of the double-bridle may be mentioned, its advantage in preventing the horse from escaping control by bringing the chin against the chest, as it may do in the single-curb-bridle, and the relief that would come to the horse upon the route march by the use of the snaffle, many horses being harassed to the point of fatigue, or even injured, by the careless use of the severe mouth-piece.

In the method I have ventured to recommend, nothing is left to the volition of the animal, and no dependence placed upon its docility or good temper. The animal obeys because it acts instinctively and does not dream of disobedience. By the suppling exercises, and by controlling the positions of the weights and forces of the extremities, the animal moves in smooth, even and cadenced actions. It can be brought to a halt in the gallop by means of the spurs, so

that there will be no jar or disorder. It may be made to change lead in the gallop in the beat of the pace, wheel in place from high speed, and perform any movement of which it is capable, with precision and celerity. Any man of ordinary intelligence should learn the whole system in a few short lessons, and be able to apply it, after such practice as would make him a fair rider. There is nothing mysterious or difficult in any of the modern methods, and the results are marvelous.

## Reprints and Translations.

### THREE CONTRIVANCES FOR USE IN HORSE TRAINING.

TRANSLATED FROM "REVUE DE CAVALERIE,"  
BY CAPTAIN FRANCIS C. MARSHALL, FIFTEENTH CAVALRY.

#### I. CAPTAIN CHERVET'S LONGE.

THE adjustment of the longe on the bit, and the position that it takes with respect to the crest, are indicated in Figure 1. It is seen at once from the cut, that the adjustment of the longe admits of all possible combinations of arrangement at the bits (according as the longe takes one or both rings of the bridoon, one ring of bridoon and one of bridle, etc.), and that these same bit combinations are again available for the work to the right hand.

It is seen besides that the pressure on the crest is divided, and is extended on the two points A and B. The point B may be shifted to any position between the poll and the withers. In ordinary practice the relaxation of the muscles, the suppleness of the gaits, the equilibrium of the movements, are the criterions that serve as guides to determine the place of this point.

The pressure at the point A results in part from the turn of the longe under the throat latch, and experience seems to show that this arrangement conceived by Captain Chervet is advantageous in the majority of cases.

Figure 1 does not show all the contrivances adapted to facilitate the sliding of the longe both in the rings of the

bits and in the throat latch (that might itself carry a ring for the passage of the longe). A rope of ordinary hemp, about one centimeter in diameter, is suitable in most cases for the longe. The use of a rubber covering might be advantageous for that part of the longe that passes over the crest. The arrangement of details serving to make the instrument vary infinitely, each one should choose the arrangement that suits the case in hand.

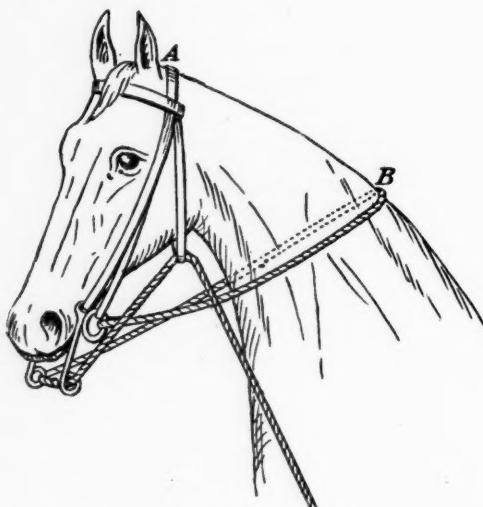


FIG. 1.

The Longe is placed so as to work in circle to the left.

The longe so adapted is not a means of coercion, as we are going to see, but an extremely efficacious instrument for suppling.\*

The horse, at first not mounted, is put on circle by means of this single instrument, which, without producing any brutal effect, possesses, by reason of its power, a moral ac-

\*It is to be noticed that the method of reining described here differs essentially from the regular methods, that have been so often objected to, not without reason, as presenting very grave defects. It differs also materially from all methods of reining that react upon the body of the horse, and not upon the crest.

tion manifesting itself by the very rapid submission of the horse. The exhibition of force and of spirits generally provokes no disorder. The horse puts himself very quickly on the bit, and the tension of the longe, leading only to muscular relaxation, creates no tendency to slackening of gait. The exercise on the longe gives to all horses an acquaintance with the bit at all gaits, and at the same time a marked élan.

The work on the circle is of itself excellent gymnastics, but it becomes here particularly efficacious because the horse works "place," relaxed, and with an impulse that the instructor can maintain, by means of the long whip, to the highest degree, without causing confusion.

The elevation and the curvature of the crest, its extension, the position of the head, the relaxation of the muscles, are regulated at the will of the instructor. The changes in the direction of the force applied, due to the arrangement of the longe, remove all danger of bruising the crest, whose base quickly acquires the firmness necessary in the course of training. The arching of the neck, and the lowering of the crest, are prevented by the choice of position for the point B.

Relaxation and lightness, especially, are obtained with great rapidity. If one mounts a horse, having first worked him a quarter of an hour on the longe, he is astonished to observe a noticeable increase in the suppleness of the jaw, ease of reaction, and tractability.

Exercise on the longe with this instrument constitutes a very interesting study for any one interested in the horse. All the movements of the animal betray suppleness and equilibrium. The horse with muscles relaxed, expends his forces without useless violence, and he acquires in a few days a lightness of attitude and of action that it is a pleasure to note. However brief the work on the longe may have been, the horse receives in some sort the imprint of its effects; and the results, at least in part, are permanently acquired. All the work on the longe may be executed with an assistant mounted on the horse.

## II. CAPTAIN DE COLBERT'S REIN.

Captain de Colbert has contrived an arrangement of the rein, that constitutes the most simple instrument that can be put into service in the troop. (Fig 2.)

This arrangement consists, after having placed the middle of the rein on the crest, in making the free ends pass through the rings of the bits, and uniting them in the hands

of the rider. The point of support B of the middle of the rein varies according to the attitude of the horse, and the object to be obtained; the rider can change it easily.

If the horse goes from the hand, the rein is placed towards the middle of the crest; if the horse arches his neck, it is placed, on the contrary, towards the poll, and becomes,

then, a sort of elevating bridoon. In the ordinary case the rein approaches this latter position.

The arrangement of reins thus effected is very powerful; the rider places the head of his horse at his will. The tension of the reins, instead of maddening the horse that gains on the hand, quiets him gradually. Finally, the slipping of the reins in the rings, and in the hands, permits the extension of the crest, of which the rider rapidly takes up the play.

Experiments have been tried upon a large number of horses. In the different defenses that the horse opposes to training (rearing, bucking, whirling about, dancing, kicking, being excited in the rank, etc.), success has always responded to the attempt.

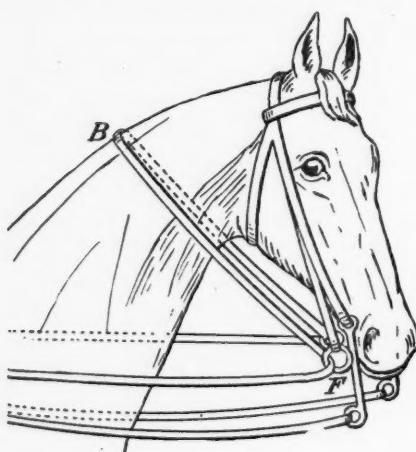


FIG. 2.

During the period 1900 to 1902 the results obtained were, moreover, submitted to a number of competent persons. One might, however, ask if this powerful instrument, put into the hands of inexperienced riders, would not offer objections. Experience has shown that awkward riders succeed rapidly enough in graduating their actions, and that they make use of this method of reining without the horse's losing anything of his élan.

This system of reining has been tried successfully by many officers and breeders to whom Captain de Colbert has recommended it. It admits of many variations; among those the bridle of Lieutenant Lebaume of the cavalry deserves special mention; he gives joint responsibility to the cheek piece and the rein, and establishes very rationally pressure on the poll. (Fig. 3.)

It is to be remarked, in addition, that the rein of support, like the longe, lends itself to all combinations of bitting.

Officers have devised, since the experiments of Captains Chervet and De Colbert, quite a number of apparatus (bridles, longes, etc.); they have thus been able, as a consequence of their personal researches, to realize often enough happy dispositions with their several arrangements. Others have experimented, generally with success, with the longe and rein of support, in the training of their own horses or those that were entrusted to them.

Finally the methods described above are applied in some regiments to the training of young horses.

All these efforts seem to merit encouragement.

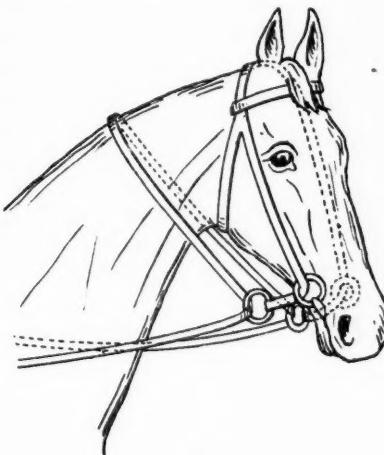


FIG. 3.

## CONCLUSION.

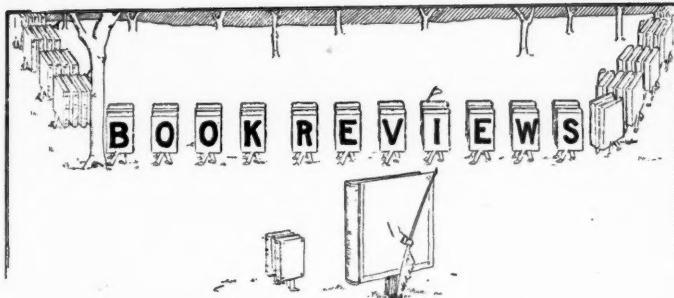
Captains Chervet and De Colbert have trained by the processes we have just indicated in outline quite a number of horses that form, from the point of view of the different objects of training, a very complete series; and it seems superfluous to remark that the greatest part of the experiments have been made upon horses destined for the army and upon hunters.

In summing up, it seems, indeed, that the methods praised by Captains Chervet and De Colbert have opened up a fertile field in the domain of equitation.

The diversity of methods of training undertaken by these officers has always put in evidence: 1st. Sureness of progress; 2d. Rapidity of results; 3d. The quality of the gaits and the comfort that the rider gets in consequence.

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[NOTE.—I have used the apparatus described in the above articles on several horses; the longe but little, the rein considerably. I can see that there is much merit in both, but my opportunities have been limited, and I am not satisfied that as much merit attaches to them as is claimed. The rein was tried, in the crudest possible fashion, on a horse in Troop C, Fifteenth Cavalry. He was a fine big horse, but very hard to hold—so hard that his rider, a specially selected strong man and a careful rider, never could draw his saber; he needed both hands to keep the horse in ranks. With a plain snaffle he was completely unmanageable, both in and out of ranks. Captain de Colbert's rein was put on him, applied to a watering bridle, and a recruit rode him easily at drill with it. It was tried with equal success on other horses with ruined mouths. It is hardly fair to the bridle to test it on green horses, so many things other than the bitting enter into their education. The little I have tested the idea set forth in the above articles, convinces me that it has a positive value, and that it deserves a thorough test.—TRANSLATOR.]



[All books reviewed may be purchased from the Secretary, Staff College, Fort Leavenworth, generally at reduced price.]

**Staff Rides.\*** In this little book of fifty-five pages the author undertakes to explain what "staff rides" are, which, it appears, have been lately introduced into the scheme of instruction of British officers. He also describes how such "rides" are conducted. They may not be rides at all, but may be done on foot; the author thinks bicycles are the best means of transportation to use in connection with staff rides.

A "staff ride" is simply a tactical or strategical exercise on the actual ground, in which the troops on both sides, and all the conditions, are imaginary; and the officers engaged in the exercise occupy hypothetical positions of duty or command. Various terms have been invented for these exercises, none of which define them. The term "staff ride" does not even suggest to one unacquainted with it what it means. It is, however, not quite so unmeaning as the term we have used in our service for similar exercises; namely, "terrain ride;" which being interpreted simply means "ground ride."

\*"STAFF RIDES." By Captain A. H. Marindin, the Black Watch. Hugh Rees, Ltd., London, Publishers.

This little book does what it undertakes to do, and besides, has a chapter on "Reconnaissance Reports" which contains many useful suggestions for very young officers, and some by which older ones may profit.

**"Adjutant's Manual."**\* This is a handy little volume which has recently issued from the press of John Wiley & Sons. As its name suggests, it is a manual for use of post adjutants, defining their duties, and stating clearly how these duties should be performed. A large amount of information is contained in a small space, and while the book would be very useful and handy on any adjutant's desk, it is especially valuable for the use of State troops and volunteers, and every battalion and regimental adjutant of the National Guard should have a copy for daily consultation.

M. F. D.

**Syllabus of Davis's International Law.**† This handy little book is intended as a time-saver. It contains all the definitions of the original work and the gist of nearly all the argument. No original matter appears, and, as the author says, it is not intended to replace the original subject, but to be useful to those who are already familiar with it, in cramming for examinations.

It exhibits the bony skeleton of Davis's International Law. By itself it can hardly be of any use, unless as an index to further study. The small size of the book, and the amount of substance it contains, suggest the value of a handbook of information containing an epitome of all subjects studied by officers, to be used in the field, when reduction of baggage makes the abandonment of an officer's library indispensable.

C. C.

\* "ADJUTANT'S MANUAL." By Courtland Nixon, Q. M. Dept., U. S. A. John Wiley & Sons, New York, Publishers.

† "SYLLABUS OF INTERNATIONAL LAW." By Lieutenant C. A. Seoane, Third Cavalry. Franklin Hudson Publishing Co., Kansas City, Publishers.

**An Army  
and Navy  
Dictionary.\***

This is a convenient little compilation for the layman to own who is interested in military and naval affairs, and reads military and naval literature; and for the landsman it contains many technical and slang sailor words with which he may not be acquainted. For the military student, however, there is scarcely an item of information in it which he must not already know, if he has got beyond the primer of his professional studies.

From its omissions and inaccuracies, as well as from some of the words included, one must judge that the dictionary has been hastily compiled to meet an immediate demand. Among such, we note "General Service and Staff College," an institution which no longer exists as defined, but by War Department orders has given place to the "Infantry and Cavalry School and Staff College" at Fort Leavenworth. "Naval Institute" is defined, but the precisely analogous institutions pertaining to the land forces are not honored; namely, the "Military Service Institution," the "Cavalry Association" and the "Infantry Association." The term "staff-ride" is not included, and to the book's credit the French word "terrain" is also excluded.

"Aparejo" is defined as "a kind of Mexican saddle fastened on a pack-animal by means of a long rope, used extensively in army pack-trains." The aparejo is not fastened on by a rope, but is strapped on, and the long rope is used to fasten the pack on to the aparejo by forming the "diamond hitch." The "diamond hitch" is not defined, nor are any of the details of the pack outfit.

"Boot-lick" is deemed worthy of definition as a military or naval term, while such familiar soldier words as "striker," "jaw-bone," "how!" and "hike" are omitted.

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"AN ARMY AND NAVY DICTIONARY." Compiled by Major John P. Wisser, U. S. Army, and H. C. Gauss, Esq., of the Navy Dept. L. R. Hamersly Co., New York, Publishers.

**The Auxiliary Officer's Handbook.\*** "The Auxiliary Officer's Handbook of General Information, and Company Officer's Lecture Book," is a small volume of 230 pages into which the author, Captain R. F. Legge, of the British Army (militia), has put a vast amount of information that will be found useful to an officer of the English Auxiliary Forces, and much that is both interesting and instructive to American Volunteers or Regulars. The little volume contains chapters on all subjects studied by our young officers during their three years' course in the Garrison School, and, in addition, some things that we take in the Infantry and Cavalry School.

His opening chapter on "Discipline," in which he dwells in sincere language on the strict discipline in all armies, is well worth reading. He says:

"In the order of its importance, I have placed the chapter on "Discipline" first in the book. \* \* \* A fighting force is either disciplined or undisciplined, there can be no in-between, and soldiering, when no discipline exists, is as useless as it is farcical. It is not speaking too strongly to assert that discipline in the soldier is the keystone of all success in war."

Continuing, under "Fire Discipline," he says:

"Fire discipline trains a man's fighting intelligence to such a degree that, though his mind be temporarily paralyzed by danger and superior control no longer exists, his instinct is to fight on alone, and to do the right thing under the circumstances. It comes into play only when within decisive range of the enemy."

The chapter (III.) on "Maneuvers" is short and to the point, but valuable to us all:

"The result of a field maneuver should not be the main thing looked for; it makes little difference who gets the best of it, and the whole point is lost if that is made the important lesson. Ninety-nine times out of a hundred the result in actual warfare would be different."

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\* "THE AUXILIARY OFFICER'S HANDBOOK." By Captain R. F. Legge, British Army (Militia). Gale & Polden, Aldershot, Publishers.

In this he appears not to agree with so many umpires at our maneuvers, who are prone to rule half a company of the infantry or a whole troop of cavalry off the field as "dead," because, forsooth, they have dared to come within fair range of either the infantry or artillery fire of their opponents, or who rule a battery of artillery out of action as "captured" because a troop of cavalry charges it. He apparently agrees with many of us, that these umpires would do well to read military history, or better still, follow the making of it in Manchuria.

Then follows chapters on "Marching," "The Attack," "The Defense," "Skirmishing," "Outposts," "Advance Guards," "Rear Guards," Reconnoitering," "Scouting," and "The Importance of Judging Distance," etc., in which the instruction is much the same as laid down in Wagner, except that in Captain Legge's book all that is really necessary for a Volunteer officer to know is contained in about fifty pages.

There are several short chapters on what we call "Small Arms Firing," but which he calls "Musketry," "Field Firing," "Word of Command" and "Miniature Practice With the Service Rifle." Our new Firing Regulations cover this subject more fully and better.

Then comes an extremely valuable little chapter on "Framing Orders," followed by one on "Military Law," which is too brief and not applicable to our service.

"Field Sketching and Map Making" contains probably enough for a Volunteer officer to know for all ordinary purposes, but does not go into the subject deeply enough to satisfy the requirements of Regular officers. His chapter on "First Aid" is likewise too brief except as he says, for "auxiliary forces;" but if every volunteer knows and can practice all the simple remedies given by Captain Legge in his short chapter of five pages, he will be able to get along until more expert medical aid arrives.

The chapter on "Etiquette," although mostly applicable to the British service and abounding in terms and phrases not familiar to us, contains several paragraphs that many of our Regular officers would do well to follow:

"*Salutes*.—The salute of a private soldier or noncommissioned officer should be scrupulously and courteously acknowledged, and officers should bear in mind that there is only one method of saluting or returning a salute, and that is the way laid down in the drill book. The salute with two fingers raised to the cap, or to answer a salute by raising the cane to the cap is the essence of slackness and resembles the manner adopted by grooms and cabmen.

"*Funerals Passing*.—Officers in uniform should always salute a coffin, be it a civilian or military funeral, standing to attention until the hearse has passed.

"A lieutenant or second lieutenant is never addressed as such, either on parade or socially, nor is his rank used in writing to him, except on official letters."

There are also some instructive paragraphs on the etiquette of calling on garrison and regimental messes, on regiments, returning same, etc., which are applicable to officers in all armies, and with the customs of which many officers are not familiar.

The little book is full of meat valuable for the enthusiastic officer, and there is much in it that will assist one in preparing short lectures; unlike so many writers on military subjects, Captain Legge does not repeat. When he says a thing once he considers that sufficient, and seems satisfied to close his volume with 228 pages.

The majority of our writers become so verbose in their attempts to produce a three dollar volume instead of a dollar one, that the book loses much of its usefulness by having the knowledge contained in it so smothered in words, and repeated so many times in as many different wordings, that the real ideas of the writer cannot be determined, and a clear and concise definition cannot be found in the book.

Although the sequence of the chapters does not appear to me to be logical, "Camping" being thrown in between "Outfit Allowance for Volunteer Officers" and "Test for Meat, Bread and Water" in Part III., instead of being at the beginning or end of Part I., yet the milk of the cocoanut is all there, and it is to be commended for clearness, brevity and conciseness. The little book is worthy of a place in every officer's library:

M. F. D.

**Indian Fights and Fighters.\*** This volume is the fourth one of the "American Fights and Fighters" series written by Doctor Brady. There are many intensely dramatic incidents incorporated, the most important being the Fort Phil Kearney and the Custer massacres; the "wagon-box" fight on Piney Island between Major Powell's detachment of thirty-two men and Red Cloud's band of 3,000 warriors; and last and best, George A. Forsyth's fight between his "Rough Riders" and Roman Nose's band on the Arickaree fork of the Republican River. The book abounds with deeds that "ring like a trumpet-call to American manhood."

There are many illustrations and a dozen maps and plans. The book, however, lacks a general map of the Northwest country, which makes it quite impossible for the uninitiated reader to follow clearly the events recorded.

The author objects to the application of the term "massacre" to the Phil Kearney and Custer affairs, and his point is well taken. Nevertheless, right or wrong, that is the name by which they are known, and we doubt if the public can be made to change the misnomer.

Custer's story takes up about one-half the volume. The author concludes that Custer disobeyed his orders in pursuing and attacking the Indians as he did. He has spared no pains to get at the facts, and he gives in an appendix original contributions to the subject from various pens. It is an old, old story, and has been threshed out pretty fully by the representatives of both sides. While all must admit the industry of the author, and his fair, unbiased attempt to get at the truth, yet all will not agree with him in his limitations of the interpretation of the celebrated Terry-Custer order.

It seems inexplicable that General Miles should make the statement in his book that "we have positive evidence in the form of an affidavit of the last witness who heard the two officers in conversation together on the night before their commands separated, and it is conclusive on the point at issue" (disobedience of orders), and yet that he should fail not only to produce the affidavit, but even to name the

\* "INDIAN FIGHTS AND FIGHTERS." By Cyrus Townsend Brady, LL. D. McClure, Phillips & Co., New York, Publishers.

affiant. Such an affidavit if made by a trustworthy person would absolutely clear Custer's good name of any stigma whatsoever, and if the affidavit is at present in existence it should be produced, no matter whom else it might injure.

The author is doing a great service for the army by thus recording its deeds, and we wish him the same success in his forthcoming books that he has attained in this stirring volume.

All officers of the army who have any original information concerning the Indian campaigns in the Northwest or Southwest, conducted since 1876, should send it to Doctor Brady, so as to enable him to reach a just conclusion and to be correct historically. This is a duty that officers owe to their regiment or corps, and to the army, and we hope that the author's appeal for such information has not been made in vain.

P. E. T.

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**The Development of Tactics.**\* The second edition of this work, enlarged and revised by its author, Dr. T. Miller McGuire, Barrister at Law, Inner Temple, London, has recently reached our table.

The first edition appeared March 1, 1904, and was compiled at very short notice, to be used as a text book by candidates for the British Army. One of the subjects in their examination is "History and Development of Tactics," and, as the War Office has never authorized any text book on the subject, Dr. McGuire prepared the volume largely from his own notes, in order that candidates might have something definite on which to commence their studies.

The book scarcely appeared from the press before the Regulations were altered, requiring the subject in question to cover the development of the three arms from 1740 to the present day. In order to meet this requirement Dr. McGuire has revised and enlarged the work to cover the period from Frederick the Great to the Boer War, and even goes as far as to include some valuable conclusions from the Man-

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\* "THE DEVELOPMENT OF TACTICS." By T. Miller McGuire, M. A., LL. D., Inner Temple, Barrister at Law. Hugh Rees, Ltd., London, Pubs.

churian War, as late as the battle of Kin-Chow. The Doctor's introduction is very interesting:

"The definition of tactics is simple enough and involves no subtle refinements of phrase. Tactics are the maneuvers whereby an enemy is defeated on the field of battle, or delayed during a retreat, or surprised in his cantonments, or reconnoitered in force, or driven out of houses or woods, or whereby rivers and mountains are crossed in spite of resistance. The tactician supercedes the strategist when the troops come within the range of hostile weapons."

"The theater of operations is the sphere of the strategist.  
\* \* \* The principles of strategy are eternal, to-wit: breaking a front or turning a flank, and concentration of superior force at vital points.

"The application of tactical principles depends on the modifications in weapons, their range, their striking force, their destructive power, and the greater or less quantity that can be carried on the person of the soldier, or with convenience in wagons; on sound men; on sound horses; on a lavish supply of necessaries; excessive supply if possible, as the case may be, of arrows, or javelins, or bullets or shells.

"It may be justly said that tactics should be changed every ten years if a State hopes to retain superiority; constant study, provident care, are always essential. *Peace gives a chance of being ready for the next war.*

\* \* \* \* \*

"Officers cannot be improvised, and an efficient professional education for soldiers is far more valuable to individuals and to nations than is the education of lawyers or of any other class of the community."

In the opening chapter the author describes "The Details of Armament," beginning with the time of James I. and matchlocks, and leading up to our present small arms. Most of the chapter, though, is devoted to developments in field artillery, commencing with the few pieces which Frederick the Great had in his army, showing how necessity compelled him to increase this arm, until, finally, he depended largely upon it to take the place of his depleted infantry. From Frederick he goes to Napoleon, and his increased tactical employment of artillery, and the important effects produced by his concentration of the fire of this arm. Among many interesting statistics he gives the following:

"The following comparative statistics have been given for the war of 1870-71, based on the wounded admitted to the hospitals. On the German side eighty-eight per cent. were wounded by infantry fire, five per cent. by machine guns, five per cent. by artillery, and two per cent. by swords, bayonets and lances."

The author closes his chapter on "General Details of Armament" by the appeal of Lord Roberts, fresh from his South African experiences, to the patriotism of the voters of Great Britain:

"Let me say how much I trust that the whole Nation will take the dearly bought experience of the war in South Africa to heart, and do all that is possible to encourage good shooting in the army. No other qualifications will make up for inferior shooting. However brave our men may be, however well drilled, however well set up, however well disciplined they may be, and however capable they may be of great endurance, or of riding across the most difficult country (admirable and desirable as all these qualifications are), the men will be valueless as soldiers, if they are not experts in the use of the rifle; \* \* \* for as I have endeavored to point out, it is on skillful rifle-shooting that the efficiency of our army absolutely depends."

As examples of the development of tactics and of the gradual changes which have taken place in battle-tactics, the author describes and discusses several modern battles, beginning with Leuthen, 1757, and ending with Elandslaagte, 1899, showing a carefully prepared map in each case.

The book is more historical than original, but it contains much that is both interesting and instructive, and it deserves a place in any military library. It cannot be said that it is well arranged for a text book, but the meat is there, and the student can cull and arrange it for himself. The main criticism lies in the usual show of British egotism, wherever British troops appear, using the names of officers and organizations in the familiar war correspondent style, which should be avoided in a treatise on tactics, and especially in a text-book.

M. F. D.

**Military  
Government  
and  
Martial Law.\***

Kansas City, Missouri.

The second edition of Major W. E. Birkhimer's "Military Government and Martial Law" has just left the press of the Franklin Hudson Publishing Company, of

The author, in his introduction consisting of twenty-three pages, gives the distinctions, as some understand it, between military government and martial law. He makes the greatest distinction turn upon the question whether the territory, militarily occupied, is enemy territory or loyal territory. In the first case the government exercised is military government; in the second, martial law. Without considering the premises upon which this view is based, it is sufficient to state that the author carefully preserves this distinction throughout his work. He has divided his book into two parts, corresponding to the classes of the government mentioned above, giving to military government sixteen chapters and to martial law thirteen.

In the first part the author starts at the very beginning of his subject, the power to declare war. From this rather constitutional discussion he takes the next step, the right to establish military government. Having once established this government, the first question to arise naturally is that regarding the allegiance of the inhabitants of the occupied territory. This is his third chapter, and is followed by the next, showing how far this allegiance can be compelled, which, of course, is only over that territory held by a sufficient number of troops to render the government effective.

The author then proceeds to the question of enemy territory, the right permanently to acquire the same, or to hold it temporarily. He cites cases like that of Castine, Maine, and gives the principles of conquest of the British government.

He goes into the effect of occupation on local administration, and shows the important consequences of regarding *occupied* territory as foreign. The important case of Upper

\* "MILITARY GOVERNMENT AND MARTIAL LAW." By Major W. E. Birkhimer, Artillery Corps, U. S. Army. Franklin Hudson Publishing Co., Kansas City Publishers.

California in the Mexican War is treated of, and the war tariffs in connection therewith. DeLima vs. Bidwell, the Porto Rico case, is given, as well as remarks upon the occupation of Cuba by the United States. Napoleon's occupation of Spain is cleverly shown by the author to be a complete system of military government, intended to reduce the Spaniards piecemeal into subjugation, with a view to the subversion of their kingdom.

Chapter VIII. should be carefully read. It is upon the general proposition that all inhabitants of one belligerent are enemies of the other, and discusses levies en masse, guerilla warfare and war rebels. A survey of this subject, more marked for just and humane consideration, has not appeared from the pen of any writer. The guerilla banditti of the Philippine Islands and South Africa are carefully treated, and an idea of the author's broad mind and comprehensive view of his subject can best be attained by giving a few of his sentences:

"The experiences of the United States troops in the Philippines and the British in South Africa demonstrate how annoying, persistent, not to say really formidable, guerilla warfare may become even against regular troops. The fact that renders it difficult to the latter is the impossibility of telling friends from foes, or the preventing a man extending the right hand of friendship one moment, and shooting from point of vantage the next, and so indefinitely. Concentration camps are one effective instrumentality for handling the population, all beyond their borders being liable to be shot. Both in South Africa and the Philippines every practicable attention was given to the comfort of those forced to stay within the boundaries of these camps: this fact the official records show. \* \* \*

"The extraordinary, not to say unprecedented, leniency of the United States Government in dealing with the Filipinos after all semblance of regular fighting was abandoned by the latter, and guerilla practices alone resorted to, must have surprised the civilized world. The chameleon character of these people just referred to—pretended friends one moment, enemies in ambush the next—placed them outside the pale of civilized warfare, and justified severest measures of repression. The measure of mercy toward them was filled to overflowing.

"While this was true, there were some sporadic cases of cruelty practiced upon the natives by the soldiery, in violation of the laws of war, which peremptorily forbid torture. The disposition to indulge such practices arose probably out of the diverse policies of the two parties contestant, the United States pursuing one of beneficence, even in derogation of its rights under the laws of war, the Filipinos pursuing their course of treachery and unquenchable hate in utter disregard of these laws. As that which was legitimate was not availed of to meet this course of savagery, the illegitimate crept in."

Chapter IX. is a vastly instructive one. Its title is, "Laws Obligatory Within Occupied Territory." There is a discussion of the jurisdiction of war courts, how they have been established in our past history; and cases are cited where the Supreme Court has constantly upheld the power to establish such courts and the exercise of their jurisdiction. In this chapter is the treatment of Military Commissions and Provost Courts, showing the criminal jurisdiction of the one, and the general jurisdiction of the other. The liability of camp followers to trial shows the width of military jurisdiction alone, and cases are cited to show that, however long the occupation of enemy territory may continue, the tribunals of the country can have no jurisdiction over the members of the invading army. And here, as elsewhere all through the book, cogent cases are given to the very question in point, and many of them are cited at some length.

Chapter X., on the rights regarding personal property, is long, but it exhausts the subject. The matter is brought right to the present by such cases as the following: The Dagupan Railway; the case of Doreteo Cortes of Manila; cases arising in Porto Rico. And there are references to the binding of the municipalities of Cuba to large debts.

His discussion of rights regarding public property, trade with occupied territory, and insurrections against military government, are in line with all authors of good repute. On these subjects such illustrations are given as, Smith, Bell & Co., Manila; Sulu Archipelago; Experiences in the Philippines and the policy of our government there.

We next have an important chapter on "The Responsibility of Commanders Under Military Government." This is a chapter that should be carefully studied by all of our officers. The author brings prominently into view how this responsibility on foreign soil is largely a military one; but if it be in rebel territory, or territory that likely will be annexed, political considerations enter, and the question is no longer purely a military one. He also brings out the responsibility to neutrals, and to the subjects of one's own state. He points out the analogy between a commander of enemy territory and a judge upon the bench; that both should be measured by the same rule while exercising discretionary powers. He gives the case of *Mitchell vs. Harmony*, and a careful study of this case will make clear to most officers the scope of their duties and how far they may or may not expect protection, when later called upon to justify their acts.

His last two chapters on Military Government treat of tribunals of that kind of government, and when that government ceases.

In Part II. the author gives a history of martial law under English jurisprudence, and the theory of the same in the United States. He shows how martial law supplements the common law, and justifies the nature of the necessity of it. The great question of Federal authority to institute martial law, is discussed from both executive and congressional standpoints. Numerous cases are cited of martial law in the States and Territories; how it has been administered, and through what tribunals it has been and should be promulgated.

Almost the greatest every-day, practical value of the work is in the two chapters on the "Responsibility of Commanders" and of "Subordinates under Martial Law." An officer who is thoroughly acquainted with the author's treatment of this perplexing subject, will find few cases that he will not be competent to handle. And this subject is of the highest importance to the second lieutenant, as well as to the higher commanders; for one of the lower rank may find himself with a small platoon on a side street where quick decision

and accompanying action are necessary. Every officer should have this volume in his library for the perusal of these two chapters, if for no other reason.

The appendices are well chosen and pertain to matters so constantly arising in war that the book then becomes a sort of ready reference in some particulars. As for instance, General Orders No. 100, 1863, is given and compared with the corresponding articles of The Hague Conference Code, 1899. The instructions for the government of our armies in the field, from the New Field Service Regulations, with other articles of less importance, are included.

It is not easy to understand how one can obtain as concise a statement of the subjects treated of in this volume anywhere else. A person can, by the same hard work that the author has spent upon the subject, dig out the law of military government and martial law, but he must come to the same conclusions as does the writer, after an immensity of labor. In writing this book, Major Birkhimer has done the army a great service, in an able manner, and attentive study of his work will make officers so familiar with their duties that people hereafter will not have occasion to look upon martial law as the bête noire of all that is terrible and unholy.

J. F. BELL.  
*Brigadier General, U. S. A.*

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**Military Studies.\*** The eighth volume of the International Military Series consists of five military studies by Frederic Louis Huidekoper. The subject of the first study is, "Did Grouchy by disobedience of orders cause the defeat of Napoleon at Waterloo?" The second is a study of the oblique attack, in which the battles of Kolin, Rossbach, Gravelotte, and Leuthen are compared. The third is a comparative study of Jena and Mars la Tour. The subject of the fourth is "Napoleonic Strategy," and of the fifth is "The Campaign of Eckmühl."

All these studies, except the first, which was published

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\* "MILITARY STUDIES." By Frederic Louis Huidekoper. Franklin Hudson Publishing Company, Kansas City, Publishers.

in the *United Service Magazine*, have been published at different periods in the *Journal of the Military Service Institution*. They are valuable contributions to the military literature of recent times; and especially is this true of the studies on "Napoleonic Strategy" and "The Campaign of Eckmühl," which show great diligence and research.

The reader will find that these studies cannot be read and digested at a sitting; to be fully appreciated they must be studied with diligence and care, and the movements must be carefully followed on the maps. When read in this way, the book will be found most instructive to the military student.

In the preface the author says:

"The writer realizes thoroughly the force of the argument with which he has so often been confronted, as to the uselessness of modeling the tactics of to-day upon those of commanders of the past, however great; but although the improvements in ordnance, transportation and other increasing facilities are constantly modifying tactics, no one has yet succeeded in refuting the maxim that the fundamental principles of strategy always have been and always will be immutable. Moreover, there is not the slightest doubt that every officer, however well versed otherwise in military science, can draw much valuable information from a careful and exhaustive study of the campaigns of such generals as Napoleon, Frederick the Great and Von Moltke. 'It does not take long for contemporary pygmies to hide the giants of time past; the old horizon of renown is ever covered by thicker mists, and only a few colossal figures remain uneffaced.'"

These words are timely, for of late there has been a tendency among a few military students, who have made but a superficial study of the subject of strategy, to arrive at the conclusion that the principles are not unchangeable. Or, as they put it, that there are no principles of strategy, simply rules which are constantly being modified and changed. Increased efficiency of modern firearms, greater facilities for the movements of troops, and improvements in methods of dispatching orders have made so many maneuvers impossible in the present-day which were possible in the past, and so many possible in the present day which were impossible in

the past, that upon first thought even some able students of military matters have been slightly led astray, and have hastily come to the conclusion that the principles of strategy are constantly undergoing a change. As a matter of fact "the fundamental principles of strategy always have been and always will be immutable." Inventions and discoveries have changed the methods of carrying out these principles, but the principles themselves are unchangeable. Taking advantage of wireless telegraphy, a general or admiral may to day find it a great deal easier to frustrate his enemy and concentrate his forces upon the vital spot of the theater of operations, or may, by reason of his enemy's being able to take advantage of this new discovery, find it much more difficult to execute these maneuvers; but the principle of a concentration of forces—of bringing a stronger force upon the battlefield—is as necessary and true to-day as in the days of the great Napoleon. "The fundamental principle," says Jomini, "upon which every military combination rests, is to operate with the greatest mass of our forces, a combined effort, upon a decisive point." Clearly this principle is true for all time, and applicable alike to armies and navies.

Mr. Huidekoper's study on "Napoleonic Strategy" is the best summary of the subject in the English language; probably the best in any language. No one can read this chapter without being impressed by his clear insight into Napoleonic methods.

After a thorough study of Napoleon's campaigns, the author thus sums up the essential principles of strategy which must be observed:

- "1. To keep one's forces united.
- "2. Not to be vulnerable on any point.
- "3. To move with rapidity on important points.
- "4. To give one's self every chance possible to assure victory on the battlefield by there uniting all one's forces."

The author adds:

"These essential principles Napoleon applied to his own campaigns, which are remarkable for five important charac-

teristics, viz.: 1. *The initiative at the commencement of hostilities*; 2. *One line of operations*; 3. *The unity of the forces*; 4. *The rapidity of movement on decisive points*; and 5. *The concentration before battle*."

In the last paragraph of the book the results of the campaign of Eckmühl are thus vividly summed up:

"In six days after arriving at Donauwörth, Napoleon had extricated his troops threatened with disaster, brought order out of chaos, withdrawn Davout from his dangerous isolation, concentrated on his own center, separated and driven the Austrian left back to the Inn, gained possession of the enemy's communications, and had defeated the Archduke and forced him across the Danube. In three days he had fought three successful pitched battles and had killed, wounded or captured more than 24,000 men. This 'Five Day's Campaign' is unique in history—alone it would have sufficed to immortalize such consummate genius, for never was success more brilliant or decisive and never was it better deserved. In his dying days at St. Helena the Emperor recurred with constant pride to the strategy of Eckmühl; and in his own commentaries declared that 'The battle of Abensburg, the maneuvers of Landshut, and the battle of Eckmühl were the most brilliant and the ablest maneuvers of Napoleon.'"

In this volume Mr. Huidekoper has shown marked ability as a writer of military history, and we trust he will continue his studies. We should like to see from his pen a detailed account of the campaign of 1814 in France.

The study of Napoleon's campaigns always has been and always will be most instructive; for take him all in all, he was the greatest master of war that the world has ever known, possibly the greatest that the world will ever know. "The series of Napoleon's successes," says Professor Seeley, "is absolutely the most marvelous in history. No one can question that he leaves far behind him the Turennes, Marlboroughs and Fredericks; but when we bring up for comparison an Alexander, a Hannibal, a Cæsar, a Charles, we find in the single point of marvelousness Napoleon surpassing them all." "Napoleon," says Colonel Dodge, "collated the knowledge of war which existed in his youth, and out of

it wrought so perfect a system, that he is the one captain whom all modern soldiers strive to copy." "He was," says Lord, "a military prodigy equally great in tactics and strategy, a master of all the improvements which had been made in the art of war, from Epaminondas to Frederick II."

What a career! First, that wonderful Italian campaign, which, in brilliancy of strategical combinations and marvelousness of results, surpasses every other campaign in the world's history; then the Egyptian campaign, where Bonaparte came within a hair's breadth of founding a mighty empire; then the campaign of Marengo, where for a moment his star seemed about to set in darkness, then like a flash rose again in its former splendor; then that gigantic war with England, which, before it terminated, involved nearly the whole of Europe in deadly conflict, and shook the very foundations of Continental governments. During this mighty conflict, which began with the projected invasion of England and ended with Napoleon's final defeat at Waterloo, the armies of Austria, Prussia, Russia, and Spain were conquered, nations were crushed, thrones were crumbled, coalition after coalition melted away before the attacks of this matchless warrior's victorious troops; and states, provinces, and cities were added to the French Empire, until, finally, at Friedland, he reached the height of his power, and ruled directly or indirectly over the greater part of Continental Europe. Then came his reverses; the campaign of Russia, the battle of Leipzig, the abdication and exile to Elba, and the return to France, where for a brief period his genius again blazed forth with its former splendor; then the final acts of the great drama—his fall on the fated field of Waterloo—his banishment to the rock of St. Helena.

What a stormy career was his! His life was almost a continuous battle. Even his death took place during a fierce storm, that beat tempestuously upon the rocky shores of that lone island; and in the delirium of the approaching end, amidst the shock of the billows and the battle-like roar of the waves, the great captain imagined himself once again at the head of his army in fierce conflict on the tumultuous battlefields of his earlier days.

H. H. S.



## Editor's Table.

### A FILIPINO PROCLAMATION.

The following is the translation of a proclamation found by Captain Hartman, First Cavalry, with other insurgent documents in an old sugar mill near Bauan, Luzon. It is given as a sample of the kind of war news the inhabitants of the Islands were furnished by the insurgent authorities :

"Be it known to everybody that this telegram was received this morning, and reads as follows:

"Saturday and Sunday, the 4th and 5th of the present month, a battle took place, and there were killed on our side less than two thousand individuals, including those who were in the Church of Paco.

"On Monday our President descended upon Caloocan, and in the battle which took place there, three hundred Americans were killed, and we captured one general and seven hundred of his soldiers.

"On Tuesday we cut them off and our illustrious chief of operations, Señor Montenegro, took about four hundred Americans and one general as prisoners.

"On Thursday we captured one general, and many Americans were killed.

"On Saturday at Paraaque a fight took place, and nearly all of the advance guard of the Americans were killed, and afterwards they bombarded Paraaque. Since Thursday they have also bombarded Caloocan and Navotas, but the Germans intervened, and now tranquillity reigns supreme in the suburbs of Manila. General Otis has implored for the suspension of hostilities and for the termination of the war through diplomatic means; the answer of our illustrious President, Señor Aguinaldo, was that the question must be decided through war, as it had commenced with war.

"BATANGAS, February 13, 1899."

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### BILL TO PROMOTE THE EFFICIENCY OF THE ARMY.

A proposed bill has been received from an officer of the cavalry service, and is presented in the pages of the JOURNAL with the hope that it may be discussed in later issues by other officers. It is hard to see how such a measure could

be objected to by any officer who believes himself physically equal to the duties of his office; and any conscientious officer who does not believe himself equal to his duties should welcome his retirement from active service.

The bill is as follows:

"1. In addition to the examinations now required by law for the promotion of officers, every officer in the line of the Regular Army, above the rank of captain, before each and every promotion, shall be physically examined by a Board of Medical Officers of the Regular Army, and if found permanently disabled for active field service, he shall be promoted, and at once transferred to the Unlimited Retired List.

"2. Before being ordered upon active field duty, and also on the prospect of war, every officer, above the rank of lieutenant-colonel, shall be physically examined by a Board of Medical Officers of the Regular Army, and if found permanently disabled for active service, he shall be at once transferred to the Unlimited Retired List.

"3. During peace, every officer of the line of the army, above the rank of lieutenant-colonel, shall be physically examined, at least once each year, preferably before June 30th, by a Board of Medical Officers of the Regular Army, and if found to be permanently disabled for active field service, shall be at once transferred to the Unlimited Retired List.

"4. All officers above the rank of lieutenant-colonel, now on the Retired List, shall be transferred to the Unlimited Retired List, and all officers hereafter retired, shall, if of higher rank than that of lieutenant-colonel, be placed on the Unlimited Retired List."

#### ARGUMENT.

After officers of our army reach the grade of major, they are no longer subject to examinations. As they have passed many previous mental examinations, it is presumed that they are mentally competent. The same rule will not apply when it becomes a question of physical ability.

Officers of the junior grades in our army are young men in the robust period of manhood, and are subject to few physical changes. In the higher grades, the officers, as a rule, are of more advanced years, and therefore more liable to physical changes; and yet we have the anomaly of requiring young officers to be physically examined for every

promotion, and dispensing with such examination for all officers above the grade of captain. The evils resulting from our present system are well known.

It is believed that these would be corrected by the above bill.

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#### A CHIEF OF CAVALRY.

*To the Editor of the Journal:*

Recent events have had a disturbing effect on the cavalry service. The persistent talk about reduction, which has been kept up for the last two years, has probably been more demoralizing to the cavalry than a lost battle would have been. When a man sees his prospects for promotion set aside, and all his hopes and ambitions blown lightly away, he feels all the bitterness of defeat. The effect of this agitation is extended to those who enter the service from outside. For two years no one has entered the cavalry without listening to the dismal prognostications of his best friends. Under the circumstances, it takes as much courage for a cadet at West Point to apply for cavalry, as it does to lead a forlorn hope. Moreover, we are not permitted to think that all this smoke does not mean a big blaze somewhere; for we are told that the matter has been seriously considered by the President, by the Secretary of War, the Chief of Staff, the General Staff, and by the Committees of Congress.

While the discussion goes gaily on, it is a remarkable fact that most of the other arms of the military and naval services have been able to show that increase and not reduction was absolutely necessary for them. As instances of this, look at the bills for increase of one kind or another, either approved or already accomplished, in the case of Marines, Blue-jackets, Medical Department, Signal Corps, Engineers, Puerto Rican Troops, Philippine Scouts, Chaplains, Ordnance and Coast Artillery. Apparently the delay in completing all of these changes is due to the fact, that the reduction of the cavalry seems to claim first consideration.

The dental surgeons and the infantry, I believe, alone retain their *status quo*.

And in the midst of it all, the cavalry has not been heard. Without a recognized head or a spokesman who is qualified to speak, it is "the buffet of the idle tongue," and on fortune's cap the broken feather. A number of cavalry officers have written letters to members of the Executive Council of the Cavalry Association, suggesting that something should be done. Truly something should be done, and correct it is that the CAVALRY JOURNAL is the proper medium for the exchange of views; but the JOURNAL is the servant of the Association and not qualified to speak on matters of policy. The JOURNAL is patiently waiting for members to speak for themselves, and take a hand in this matter of army organization.

It is almost unnecessary to recall that beneficial changes in military and naval matters never come without discussion and agitation for years. It was ten years before the infantry got their three-battalion organization; the question of a General Staff was agitated for a longer time; examination for promotion and lineal instead of regimental promotion were all the results of years of discussion in the service papers.

Unquestionably the first idea of those who recommend and make the laws is to provide an efficient army in all its branches, and they will not knowingly discriminate against any particular arm. But in the absence of full information and well digested schemes, there is always danger that propositions may find favor which have not been sufficiently studied and discussed. In military matters we have not always been guided by the light of experience, as witness the almost total elimination of cavalry from our army for fifty years following the Revolutionary War; the dismounting of the cavalry immediately after the experiments with militia in the Florida War; the absence of cavalry in the Federal Armies in the first years of the Civil War.

If there are any good reasons why the cavalry of the U. S. Army should remain as it is, be increased, reduced, changed

in organization or otherwise, it is a good time to bring it out. I for one suggest that we need a CHIEF OF CAVALRY.

VELOX.

*To the Editor of the Cavalry Journal:*

The January number of the JOURNAL contained a short article styled "Our Cavalry an Orphan," which seems to me to be very much to the point. Our cavalry is not all that it should be; even its most zealous advocates would be glad to see it accomplish more than it does; but to do this will require more uniformity and particularly more opportunity.

The War Department issues general orders prescribing certain months for drill and field exercises, others for target practice, and still others for theoretical instruction and school work. To the post commander is left the execution of these orders, and upon his initiative will depend almost entirely the thoroughness of the instruction and the efficiency of the troops.

The cavalry is inspected probably twice a year, as are other troops—once by the Division Inspector, and once by the Department Commander. Each makes his notes, which are embodied in his report of what he has seen. Here the matter generally rests. There is no comparison of the reports on the work of the cavalry in the Department of Texas with the reports of that in the Department of Dakota, or any other Department. The divergence in these reports may be ever so great as to mounts, equipment, instruction, enthusiasm and efficiency; yet there is no one to detect it. The Chief of Staff cannot possibly give his attention to such details.

A Chief of Cavalry is the one to whom these reports should be rendered, or better still, the one who should make the inspections. If the Department Commander and the Division Inspector happen both to be infantry or artillery officers, their criticism on the cavalry must of necessity be based on rather limited experience.

But the need of a Chief of Cavalry is not demonstrated in the lack of uniformity nearly so much as in the lack of opportunity. Before the artillery had a Chief, no doubt there

was great divergence in equipment and instruction, but that was insignificant as compared with the lack of attention and general neglect of the whole arm of service.

This is just what we are laboring under in the cavalry to-day—neglect. Inspectors, even the highest in rank, make favorable reports if arms and equipments are bright, horses fairly manageable, lines well preserved in marching in review, and advance-guards promptly thrown out. Add to this a few "stunts" in the riding hall, and the cavalry is all that it is expected to be.

Let us stop and consider what would be required of the cavalry in case of war. The first and simplest duty would be for a troop here and there as mounted escort for general officers and mounted orderlies. The second duty would be for squadrons and regiments to scout and reconnoiter two or three days in advance of the armies, or for one or two hundred miles over a border; or to threaten the enemy's communications miles in their rear; or to proceed on special missions, such as the destruction of arsenals, mills, store-houses, bridges, dams, locks, etc. Once in contact with the enemy, the third duty would be to fight advance-guard or rear-guard actions, charge the enemy's cavalry, or dismount and take its place in the line of battle.

The first of these duties is insignificant and unimportant.

The third is highly important, but our drills, target-practice and maneuvers fit us for it as well as can be in time of peace.

It is the second of these duties which constitutes the essential cavalry work; that which no other arm of service can perform. It is the one to which we should give most attention, and yet is the one in which, from lack of opportunity, we are most deficient.

Had we a Chief of Cavalry, how long would it be before he would make opportunity for this training? Such a thing would not be difficult of accomplishment. Many of our cavalry posts are close enough together to enable the cavalry from one to operate against that from another. Such is the case with Forts Riley and Leavenworth, Robinson and Meade, Clark and Sam Houston, Jefferson Barracks and Sill, Assinni-

boine and Keogh, Sheridan and Des Moines, Presidio of San Francisco and Presidio of Monterey. At isolated posts, like Ethan Allen and Chickamauga, a squadron could go out one hundred miles and operate back against another squadron.

This class of work would develop the true cavalry spirit in both officers and men, work of which the cavalry might be and should be proud. Few of us who have entered the cavalry within the last twenty years have ever had the opportunity to do any strictly cavalry work of which we can be proud. *Esprit de corps* must diminish, if it has nothing on which to thrive.

Give us a Chief of Cavalry who will know every regiment, and every officer in it; who by dint of his own enthusiasm will inspire others with more cavalry spirit; whose inspections will be thorough and searching, and at which every officer will quail if he is not up to the required standard; who will know whether every officer owns his own horse, and what kind of a horse it is; who will know the kind of a cavalry horse we should have, and see that we get it; who will condemn those and only those, that are unfit for service; who will see that we get at least six weeks of field service every fall, exclusive of maneuvers.

In going into the field for the duties specified under the second class, the cavalry should go light, without wagons or even pack-train. Each officer and man should carry an extra blanket and a change of clothing on his horse. The squadron quartermaster and commissary should be provided with enough cash so that he could purchase forage. Settled as our country is now, this will be possible once in twenty-four hours. Fresh beef and bread should also be purchased; the other components of the ration could be bought or carried, or both, *i. e.*, buy five days' supply at a time. We have in our saddle-bags nice little sacks, supposedly made for carrying sugar, coffee or salt; but who ever heard of a man's using one of them? Such things as this should remind us not of what we are doing, but what we are not doing. The squadron quartermaster and commissary should be given the cash (not blank vouchers) for making purchases; it will unquestionably be found that he can purchase in the field at less

than contract price at the post, the producer having no commission or freight to pay. Blank government vouchers are below par with the countryman who has never seen one before. This is the method of supply that should be adopted in time of war, and it should therefore be used in time of peace.

The field exercises of the squadrons and regiments should be prepared by department commanders. Squadron and troop commanders would learn how to scout the country for an enemy, and having found him, how to keep the contact; men, when a couple of miles from their troop, would acquire confidence, and not feel themselves lost and more concerned about getting back than about carrying out their orders. Men would learn how to use and care for their horses under field conditions. Squadrons of cavalry that had been in the field for a month or six weeks, as above, would feel like veterans; by the time they had had this field service for three years they would be so valuable to the country that no one would talk of cutting down our cavalry; they would say: "They are so good we cannot afford to let them go; let's keep them all."

MALVERN-HILL BARNUM,  
*Captain and Q. M. Eighth Cavalry.*

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#### PROMOTION BY ELIMINATION AND A RESERVE LIST.

The discussion of the question of promotion by another method than seniority, long the rule in our service, is becoming so animated that it is quite evident this important matter is receiving careful consideration from our officers, and it is hoped that the various suggestions will ultimately crystallize into a definite form acceptable to the majority of those most interested.

It cannot be doubted that the "selectionists" are in the minority—not that our officers are opposed to the principle of selection, but they fear that its application cannot be freed from the suspicion of injustice in the form of pull, politics or propinquity, for which reason the "eliminationists" preponderate.

Is a radical change necessary? The present plan of promotion was a step in the right direction, and went as far as at the time (1890) seemed advisable; but it now needs developing to accomplish the best results, which is *the retention on the active list of the most efficient officers only, and their promotion by seniority.*

The criticism on the execution of the existing law is that it does not eliminate any considerable percentage of officers, and leads to the unwarrantable inference that we are practically all up to the highest standards of mental, moral and physical efficiency.

While it is undoubtedly the fact that a large majority of our officers are above criticism, there are some instances in which it is not so, for which the army itself is responsible, since the law requiring examinations for promotion gives into our own hands the almost *absolute control of the character of our personnel.* It is true that we occasionally hear of the overruling of the recommendations of examining boards; but these are rare exceptions to the general rule of their approval, and it may be safely assumed that the examining boards determine the standard of military efficiency in our service.

If this is the case, are such boards so organized and conducted as to determine fully, in every instance, whether the candidate for entrance or promotion be mentally, morally and physically fit? We believe it is the opinion of the majority of officers that such is not the case.

It goes without saying that all examinations in each grade should be of equal severity—and hence it follows that all questions should be prepared at a central bureau—and the answers marked there. The details of the physical and practical examinations should also be sent to this central bureau and graded, and there, too, the record should be weighed. This has not heretofore been the case. The plan outlined is not novel, and its long use in the examinations for admission to the Military Academy has demonstrated its efficiency.

No matter how conscientious the members of examining boards may have been, there are certain influences that have

had considerable weight in determining their findings. Among these may be mentioned comradery, family or other personal considerations, and last but not least, an unconscious recognition of a vested right, increasing with length of service, which an officer is supposed to acquire, entitling him to retirement with pay. This undoubtedly becomes a very important consideration when a board has to decide whether or not a brother officer is to be wholly separated from the service.

From the foregoing it logically follows that if the system of examinations for promotion is perfected and extended, local influences eliminated, and the right of the officer to a proportional share in his retired pay (which is in a sense detained pay) recognized, there is no reason why the unfit should not be made to "mark time," and the fit be advanced with but little change in present methods.

So much for the officer, but what of the government and the service? As a matter of fact the "unfit" for advancement might be very fit to perform certain military duties. It does not always follow that a good captain will make a good colonel, and there may be plenty of work for him to do as a captain, which there is no reason why he should not continue to do quite as well after as before being jumped by a junior who has shown himself fit for the higher grade. The officer who fails to pass his examination for promotion should be placed on a "*reserve list*," to be created by legislation, a waiting list where his "waiting pay" would be comparatively small, depending upon grade and length of service. From this list he might be assigned to such duty as he is considered capable of performing, and, while on this duty, his pay and emoluments should be those of his grade in active service.

In addition to the officers who have failed to pass the prescribed examination tests, the following classes should be included in the proposed "reserve list":

- 1st. Those now on the "limited" retired list.
- 2d. All officers under sixty-four years of age who in future shall be found unfit for active service by reason of physical disability originating in the line of duty.

3d. All officers who have reached a prescribed age while serving in any grade, say fifty-five years for lieutenant-colonels, fifty for majors, forty-five for captains and forty for lieutenants.

The "retired" list will thus consist of those officers only who have passed the limit of sixty-four years of age, and be in reality what the name indicates, a list of superannuated officers incapable of performing any kind of military duty.

The subject of graded retirement for age we believe to be beyond the stage of discussion; that it is desirable for our service is not to be doubted; that it is practicable is proved by long experience of it in other armies. That younger officers in the higher grades are deemed necessary in our service, is evidenced by the fact that special inducements to retire have been offered the older officers.

It must be borne in mind that all officers who go on the proposed reserve list are not lost to the service, for many of them can satisfactorily perform some of the duties now being done by officers on the active list, whose much needed services could thus be secured to the troops from which they are detached.

The foregoing scheme might be epitomized as follows:

That the President be and he is hereby authorized to prescribe a system of examinations of all officers of the Army below the rank of *colonel*, to determine their fitness for promotion, etc.

That the "limited retired list" shall hereafter be designated the "*reserve list*," upon which, in addition to those now prescribed by law, shall be placed all officers who fail of promotion by reason of failure in the prescribed examinations, or who have reached the age of forty years while serving in the grade of lieutenant, forty-five years in the grade of captain, fifty years in the grade of major, or fifty-five years in the grade of lieutenant-colonel; *provided*, that the pay of officers of the reserve shall be determined by grade and length of service, except in case of disability, say three-quarters pay for over thirty years' service, decreasing proportionately to one-quarter for under five years; *and pro-*

vided, further, that when an officer of the reserve is actually employed in the military service, he shall receive the full pay and allowances of his grade.

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### STAGNATION IN OUR CAVALRY.

An arm of the military service in which there is no promotion of its officers, or in which promotion lags behind that of all the other arms, is an arm without *esprit* or interest, and soon must become inefficient. Rank, promotion, is all that an officer has to hope for; it is what he gives his life for; it is the only reward he asks of his countrymen. If the hope of it is taken away from him, his ambition and usefulness must go too. And this, apparently, is the prospect of our cavalry to-day. It is already behind every other branch of the service in the relation which promotion and rank bear to age and length of service.

It is coming to be recognized even by the unprofessional that the chief object of our maintaining a standing army in time of peace is to educate and train officers against a time of war. The advantage, the economy, of having trained officers to organize volunteer regiments and prepare them for campaign in case of emergency could have no stronger argument, no more convincing proof, than the excellence of our late volunteer regiments, as compared with any other volunteer regiments ever organized and put into the field in the same length of time in this or in any other country. But to furnish trained officers for these volunteer regiments, and for the numerous temporary staff positions and other detached duty, the regular regiments had almost to be stripped of their officers. The Register shows that 119 regular cavalry officers were appointed to volunteer commissions during the years 1898 and 1899. It was even worse in the Civil War. A regular cavalry regiment in that war which had a field officer to command it was in remarkably good luck. The regular cavalry regiments were usually commanded by captains; sometimes by lieutenants.

It is well known that we have not enough officers properly to perform the routine duties of the service even at the

present time of profound peace. Not a squadron in the service has its complement of officers present for duty with it. A squadron recently returned from the Philippines and reported for duty at Fort Riley under the command of a lieutenant.

The present organization of our cavalry has nothing to commend it. A squadron of four troops, which at war strength would mean 400 troopers, is too large for any single man to command as a tactical unit. Yet the squadron is the tactical unit of cavalry. In every service except our own the squadron contains from 120 to 150 troopers. This is the squadron organization recognized as the best by all of the world's best cavalry soldiers. Ours alone contains 400 troopers. No reason is known to have existed for the adoption of our organization of four-troop squadrons, unless it was the desire to assimilate it to the infantry organization. This will also account for the designation "battalion" which we find in our old "Cavalry Tactics."

We know by our own experience that this is a clumsy organization. For all work at our maneuvers the cavalry regiments are divided into detachments of two troops, instead of squadrons of four troops. Such a detachment is usually commanded by the senior captain present with it, who must turn his own troop over to his lieutenant or sergeant—an arrangement never satisfactory. Best results are always obtained when every officer commands the unit assigned by the law to his rank; and the proper rank for the commander of two troops, which the world over form a squadron, is that of major.

The proportion of commissioned officers to enlisted men is smaller in our cavalry than it is in any other cavalry in the world; and the proportion of officers on detached service is, and of necessity must always be, greater than that of any other cavalry in the world.

Likewise our cavalry regiment of 1,200 troopers corresponds to a brigade or a division in every other army, of at least two regiments. Twelve hundred mounted men are too many for any living man to command, in any formation, by word of mouth, our drill-book to the contrary notwithstanding.

ing. Our cavalry regiments, for tactical reasons, ought to be divided into two half-regiments, each under the command of a lieutenant colonel, and each consisting of two or three squadrons. Each half-regiment would correspond to a full regiment in other services. This organization would also give the lieutenant-colonels a unit to command—a reason for being—instead of leaving them, as at present, the only regimental officers without a fixed tactical duty—a veritable fifth wheel.

Under every consideration, then, we need a larger proportion of officers in our cavalry. To enumerate the reasons again, and in their order of importance:

1. We need the hope of promotion, and we must have it if we are to maintain our high standard of *esprit* and usefulness. Without it dry-rot will set in soon or late. We are only human, and the people of the country cannot, and do not expect the highest class of service to continue without commensurate reward of rank; and if properly appealed to, and made to understand the condition, the Congress will see to it that we are adequately compensated for our services. The people want the best servants, and they know that they cannot hope to get the best servants at the worst price.

2. In time of war trained officers, and many of them, are what we need; and they must be trained beforehand, in time of peace, in the army. The number of officers in this training school should be greater than is required for the actual duties of peace, rather than smaller as it is to-day.

3. The tactical organization of our cavalry regiments is wrong, and is not approved by our own experience or that of any other nation. If we cannot have squadrons of two troops, the next best organization is with squadrons of three troops—four squadrons to the regiment. Indeed a squadron of three troops, each of sixty-four troopers in the rank, is a very symmetrical and easily handled unit. And a half-regiment composed of two such squadrons would be as large a command of cavalry as any man could command directly.

Such an organization would double the present number of our lieutenant-colonels, increase the present number of

our majors by one-third, and add a few more to the list of our first and second lieutenants.

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#### DIRTY OATS.

Civilians, especially those from cities, coming for the first time into an army post are always struck with our lack of what are called "modern improvements." They wonder why the Government will allow us to go on living in its houses and hazarding their destruction with kerosene lamps, when small country towns have long ago adopted electricity or acetylene gas. They want to know why our quarters are encumbered with unsafe and ineffective heating stoves when furnaces and steam heaters are so much cheaper in the long run. They ask us why we ride with a single rein and curb-bit, when horsemen the world over use a double rein. They have asked within the last twelvemonth why we were wearing "congress gaiters" which they saw their grandfathers wear.

A right observing one in an hour's walk round a big frontier post, will ask a hundred such questions; to answer which always embarrasses and humiliates us. We reply that we are aware that such things are behind the times—that we have read about electric lights and steam heaters and other up-to-date things. We point with special pride, *esprit de corps*, to the army posts that are provided with such blessings. For there are some. Five years ago we could not have named a post lighted with electricity. But things have changed—men have changed; and to-day we answer our civilian friends, "Just you wait! We shall have all those things some day. Our turn will come. Give the Departments time."

But it is not only the premier-de-siècle man from town that asks impertinent questions about our lack of modern improvements—the man from the farm also misses those that he is familiar with. Not a thrifty farmer in all the great West feeds dirty oats to his horses. Every well equipped barn, nowadays, is provided with some sort of automatic oat cleaner; and every stable in the service, whether

of troop, battery or quartermaster's department, ought also to have one.

Many months ago several such cleaners were sent to Fort Leavenworth for trial, by the Kaspar Oats Cleaner Co., of Chicago; were set up in the battery and troop stables; were found satisfactory; were favorably reported upon and recommended by a board of officers, and were —. Have any of them been supplied for the stables throughout the service, or are our horses still eating weed seeds and dirt with their oats?

This is a matter for troop and battery commanders to inquire into.

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#### THE INADEQUATE RANK OF OUR HIGHER COMMANDERS.

One of the hardest questions logically and satisfactorily to answer in connection with the organization of the armies of the United States, is, Why have our higher officers seldom, or never, been given by law rank commensurate with their commands or duties?

Since the very beginning, 1775, there have been only four full generals in our service, Washington, Grant, Sherman and Sheridan. There have been only eight lieutenant-generals. General Scott, who commanded the army in two wars, and for a longer time than any other man, was never more than a *brevet* lieutenant general.

The rank proper for the commander of each unit of troops, and the corresponding territorial district, in descending scale, is so well known that it hardly seems worth while to mention it. Any American knows that a separate army should be commanded by a general, an army corps by a lieutenant-general, a division by a major-general, and a brigade by a brigadier-general. Yet after General Scott's retirement, the rank of major-general was the highest in the U. S. Army, until General Grant was made lieutenant-general by special act of Congress.

Not so in the Confederate Army. There we find every separate army commanded by a full general, and the army

corps commanded by lieutenant-generals. In the short four years of this army's existence, seven full generals and eighteen lieutenant generals were commissioned. In this particular, as in nearly every other, the organization of the Southern forces was better and more business-like than that of the Union forces. And one can hardly read the history of those campaigns without being persuaded that many of the failures on the Union side were due to the inadequate rank of the commanders in the field, and to the consequent frequent shifting and changing, which might have been avoided had proper rank, fixed by law, obtained from the outset.

Several of the Union commanders that were deposed after a single failure, might have succeeded if given another chance. Generals learn by their own mistakes. Lee was a far better general after a year at the head of an army than he was in the beginning.

But with the lessons of five wars before them, the people and their representatives in Congress must have some good reason for withholding from our higher commanders their proper rank and titles. It certainly cannot be a question of economy, for the additional expense would be too insignificant for consideration. Can it be the lingering shadow of that superannuated bogey, fear of a military supremacy? If any trace of that shadow can have lasted after the quiet dispersion of the hosts of soldiers at the close of the Civil War, it must have faded out under the light of the twentieth century. Many of the fears and apprehensions of our Revolutionary fathers seem no more than ghosts of the nursery after the passing of a century.

Our Army to-day contains 60,000 men, two full army corps, spread over a wider territory than that occupied by any other army in the world except the British. From every point of view considered, its highest officer, the Chief of Staff, should have the rank of general, and to command the two corps there should be two lieutenant-generals. This would give the Army the proper organization to serve as a nucleus in case of war, and might prevent a repetition of some of the chaos we witnessed in the haphazard mobilization of 1898.



## Publisher's Notices.

### ON BEHALF OF OUR ADVERTISERS.

The Publisher's Department of the JOURNAL appeals to subscribers, and especially to members of the Cavalry Association, on behalf of its advertising patrons. In order that the JOURNAL shall maintain a high standard and constantly improve in get-up and appearance, it must have the patronage of advertisers. The amount of the dues of members and subscriptions would in no wise defray the expenses of the Cavalry Association and the publication of the JOURNAL. Most of the best firms of the country, those whose wares are of use to the Army, will be found in our advertisement pages; and if all who are interested in the success of the JOURNAL—and certainly all members of the Cavalry Association are—will make it a rule always to look first in its advertisement pages when they purpose purchasing anything, they will generally find what they want; and they will aid the JOURNAL by patronizing its business friends. The management would, also, be obliged, if all who deal with the JOURNAL's patrons would mention the JOURNAL in their orders.

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### BLICKENSDERFER—UNDERWOOD.

Take your choice. We have tried them both and know their worth. The army officer nowadays that does not own and use a writing-machine is not of the twentieth century. Life is too short to spend in writing any paper in duplicate or triplicate with a pen, and in reading over each of the three copies to make sure it is all right. With both the Underwood and the Blickensderfer the printing is before the eye as each letter is made; and they are equal in every other respect to the best machines on the market.

## MOET &amp; CHANDON.

Interesting statistics: The following table of importations of the principal brands of champagne that arrived at the port of New York during the year 1904 should be of considerable interest to lovers of the sparkling wine:

Moet & Chandon.....	116,549 cases	Piper-Heidsieck.....	9,136 cases
G. H. Mumm & Co.....	85,228 "	Louis Roederer.....	6,990 "
Pommery & Greno.....	24,143 "	Pol Roger.....	6,603 "
Ruinart pere & fils.....	15,822 "	Dry Monopole.....	2,932 "
Vve. Clicquot.....	13,076 "		

Tabulated according to Custom House Statistics by Bonfort's Wine and Spirit Circular, January 10, 1905.—Adv.

## THE MEHLBACH SADDLE CO.

This reliable firm is still the only one that carries the "Whitman" saddle, so well known in the Army. And now that the "Whitman" is the authorized and recognized saddle for all field, staff and general officers, and all officers hope soon or late to get into one or another of these elect classes, it behooves every officer to own a Whitman and learn to ride it. A man that can ride a Whitman can ride a McClellan, but the reverse is not true.

## POLISHINE.

Polishine is still without an equal in its line. It received the highest award at the World's Fair, and was used there in all the departments. It is a great labor-saver for soldiers, and ought to be found in every Post Exchange.

## CHATTANOOGA FIRMS.

Among our new advertising patrons will be found several Chattanooga firms. We have taken pains to solicit the patronage of the most trustworthy houses of that thriving city, and have accepted contracts with none that we do not feel we can recommend to our members and subscribers. The names will be found in our pages, of the firms that the Seventh Cavalry have found worthy of their patronage during their service at Fort Oglethorpe, and we confidently commend them to the officers and men of the new regiment

soon to take station at Fort Oglethorpe. The "ads." of these following Chattanooga firms will be found in our pages:

- A. Muxen & Co.;
  - D. R. Loveman & Co.;
  - G. W. Meyers Jewelry Co.;
  - Davidson Clothing Co.;
  - Tom Fritts Hardware Co.;
  - J. W. Kelly & Co.;
  - Wallace Buggy Co.;
  - F. M. Catron.
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#### DES MOINES MERCHANTS.

We solicit the patronage of all good cavalrymen and their families at Fort Des Moines for the following excellent and reliable firms, whose "ads" will be found in our pages:

- Garver Hardware Co.;
  - Chase Brothers;
  - Wright, The Haberdasher;
  - C. C. Taft & Co.
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#### SAN FRANCISCO HOUSES.

Among our new San Francisco patrons will be found the following:

- Baker & Hamilton;
- Leibold Harness Co.;
- Yates & Co.
- Greenebaum, Weil & Michels.

We commend them not only to the patronage of our friends stationed permanently at the Presidio, but also to the large number of those who stop there for a day or two on their way to and from the Islands.

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#### ALFRED J. CAMMEVER.

Cammeyer's shoes are so well known that it almost seems like an act of mere good will on the part of Mr. Cammeyer to advertise in the JOURNAL. We hope that any friends of the JOURNAL who do not already wear Cammeyer's shoes will begin to wear them—we hope so, more on their own account than on Cammeyer's. Any Post Exchange that does not carry Cammeyer's shoes is behind the century.



